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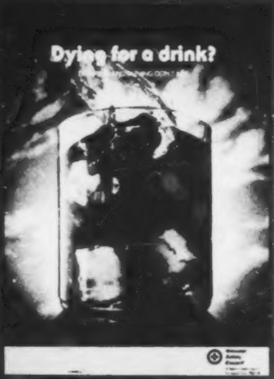
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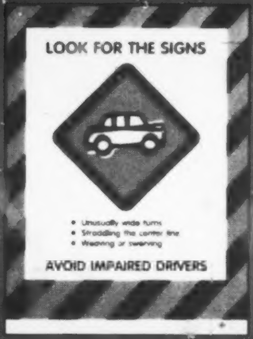
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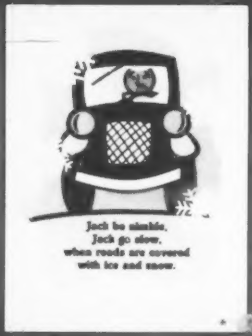
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January/February 1991

National Safety Council

TRAFFIC SAFETY

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TODAY'S TRAFFIC

Solar Power Improves Traffic Safety

Capitalizing on its sunny climate, Florida has begun a program to use its solar energy to improve traffic safety and save money at the same time, according to the Florida Solar Energy Center.

Photovoltaics, solar cells that generate electricity from light, are becoming less expensive and more efficient, making them attractive alternatives to diesel generators to run traffic safety devices, said the center.

A solar power system installed by the center in 1988 for nighttime lighting of overhead guide signs at a state highway intersection improved safety at the site and saved money, said Rudy Maloy of the Florida Department of Transportation, which is participating in the project with the solar energy center. The success of the project has prompted the two agencies to look for more ways to apply solar energy to the state's traffic safety, in addition to the four already planned for installation this year.

The groups are conducting a nationwide survey to determine the effectiveness of similar programs in other states before deciding on the devices and applications that offer the best economic and safety advantages for Florida's traffic safety program.

SOLAR
POWER
ME

Golf Carts Aid Police

Two specially modified Yamaha G5 golf carts are assisting in the law enforcement efforts of Los Angeles County Sheriff's deputies in Avalon, a small community on Santa Catalina island.

The vehicles, one unmarked, began their trial run last April and proved useful during Avalon's busy tourist season, according to Lt. Tom Gahry, station commander.

"They're very maneuverable," said Gahry, "allowing us to patrol crowded streets and alleyways more effectively."

The golf carts have two-way radios to enable police officers to communicate with the Avalon station, the mainland headquarters in East Los Angeles and with other mobile and footbeat patrol units.

While standard models of the cart don't go faster than 20 miles an hour, the modified vehicles are able to travel at 30 miles per hour.

Specially designed racks are welded to the roof of the black and white marked vehicle to accommodate emergency lights and radio transmitters. The marked cart also has a shotgun rack, a push bar at the front and a standard police siren.

The unmarked G5 has a radio concealed in the glove box and a hidden antenna. The vehicle also has a red emergency light that plugs into the cigarette lighter and can be affixed to the exterior of the cart when necessary.

Reasonable and Uniform Fines

What this country needs is a uniform schedule of reasonable fines for trucking violations, reports Paul Henry, Oregon's Motor Carrier Safety Assistance Program coordinator. He spoke at the Federal Highway Administration's Symposium on Effective Highway Accident Countermeasures, according to *Transport Topics* magazine.

Currently, penalties range from nothing in some states to as much as $2,400 for the same offense in other states, Henry said.

On the other hand, he said, great strides have been made in "two legs of the enforcement triangle: uniform inspections and uniform out-of-service criteria."

Highway safety experts at the symposium agreed that particular attention should be paid to driver hours of service, recommending a fine of $1,000 for chronic violators. A Commercial Vehicle Safety Alliance (CVSA) committee that studied uniform citations for two years, however, recommended that fines for driver hours violations range from $100 to $300. The committee said the $1,000 fines should be imposed only for violations that are "eminently hazardous to the public."

The motor carrier group called for development of a centralized computer system to enable law enforcement officers nationwide to readily identify out-of-service vehicles and drivers.

Other recommendations at the meeting included increased emphasis on on-the-spot Level II roadside inspections. These inspections, carried out in conjunction with "probable cause" stops, are "vastly more effective in detecting driver hours-of-service violations than fixed-site inspections, which can be bypassed," according to Henry.

The experts also called for better mobile enforcement of truck traffic.

Trains Crossing Carnage

More Americans were killed in collisions between cars and trains in 1989 than in all commercial airline accidents, according to an American Automobile Association (AAA) report.

In 1989, 682 people died when their vehicles collided with trains at crossings, compared with 389 people killed in commercial plane crashes. It was the highest number of train-car collision deaths since 1980.

The vast majority of track-crossing accidents are due to driver error, according to Federal Railroad Administration officials. Many drivers killed at crossings probably saw the train before driving onto the tracks and wanted to save time by crossing in front of it instead of waiting for it to pass, they said.

Drivers must realize they cannot accurately judge the speed of an oncoming train because it is so large, and that trains can't stop suddenly or swerve out of the way to avoid a collision, said the report. In addition, it can take an average freight train more than half a mile to come to a complete stop.

Car Bumpers Strong Enough?

Nearly 70 percent of American adults think car bumpers are too weak and called for legislation requiring manufacturers to include information about bumper strength on window stickers of new cars, according to a national survey conducted by the Roper Organization for the Insurance Research Council.

Currently, federal standards require that bumpers protect cars from damage in crashes up to 2.5 miles per hour; before 1983, that figure was five miles per hour.

Half of the group calling for tougher legislation said the standard should go back up to five miles per hour; the other half thought the standard should be set even higher, "perhaps to eight miles per hour," reported the Insurance Research Council.

Nearly 72 percent of respondents thought that requiring bumper-strength information on new car stickers would help consumers make an informed buying decision.

"Cars with stronger bumpers are less likely to need repairs after minor crashes," said the Insurance Research Council.

New Technology For Older Drivers

Many new automotive technologies are being developed to improve driving for older people, particularly night driving, which is most affected by aging, it was reported at the 1990 meeting of the Society of Automotive Engineers.

"It is important that engineers and designers keep drivers over the age of 50 in mind when considering the potential benefit of a new technology," said Anthony J. Yanik, a General Motors engineer.

The following new technologies are already available to car designers and are being installed on vehicles to make driving easier for older people, according to Yanik.

- *Electrochromic rearview mirrors.* The inside rearview mirror automatically varies its reflection to compensate for the degree of glare, especially helpful to drivers who don't adjust their mirror to the night driving position.
- *Head-up display.* New optical technology places dashboard display images where they can be seen clearly through the upper lenses of bifocal glasses. The images appear to be suspended in space over the car's front bumper.
- *Heated windshields.* New windshields melt up to one-tenth of an inch of ice within three minutes.
- *Tire pressure sensors.* Sensors automatically alert drivers when tire pressure is low.
- *Remote entry systems.* Keyless system allows driver to unlock the car door or trunk lid automatically while approaching the car.

The following technologies currently under development may help older drivers in the future:

- *Obstacle detection.* Systems to help prevent fender-benders and lane-changing accidents by detecting and warning drivers of objects behind them and cars approaching alongside.
- *Night vision enhancement.* Infrared systems to help improve driving vision at night or in fog and mist.

DRUG TESTS ON THE JOB

What employees can do vs. what they may have done

BY MICHAEL P. MALONE

ORDINARILY, a routine flight from Fargo to Minneapolis would not be expected to make the front pages of newspapers around the country and the national television news. But when the pilot, after a night-long binge, is still drunk upon landing, it brings out an almost instinctive fear in the American public. It shakes the trust they have in the safety of transportation, whether by air, rail or road.

The trial took a bizarre twist with the line of defense presented by the pilot's attorney, Peter Wold. His client, Captain Norman Prouse, had been an alcoholic for a number of years and was, in fact, drunk (by legal definition) when tested after the flight landed. He had a 0.13 concentration of alcohol in his blood. (In most states, a 0.10 alcohol concentration is large enough to convict a motorist of drunk driving. For pilots, the federal limit on the flight deck is 0.04.)

Wold admitted all this but urged the court to judge his client by his performance as a pilot on the day in question. The flight was smooth and uneventful. Besides, as an alcoholic, Prouse had more tolerance for alcohol than most, defense counsel argued.

The case developed into a choice between the use of drug/alcohol testing and performance evaluation to determine the risk posed by the pilot's condition.

The jury agreed with prosecutors that the crew's condition posed a threat to safety, regardless of how well they performed. "It is a crime against our sense of security," said U.S. District Judge James Rosenbaum. "Who can comprehend an entire crew alcohol-impaired?"

For flying while intoxicated, he sentenced Captain Prouse to 16 months in prison. The co-pilot and flight engineer each got a year.

No debate about the goal: safer roads.

Opposing Views

The debate over drug/alcohol screening in the workplace is not usually presented in such dramatic fashion. The arguments range from interpretations of constitutional law to pragmatic economy, from considerations of worker morale to the reliability of the tests themselves. There is no debate about the goal — to make the roads safer by reducing the number of drivers who travel them daily as part of their jobs while impaired by alcohol and drugs. There is a difference of opinion, however, as to how far employers ought to go to make sure their employees pose no risk to public safety.

Screening for drugs and alcohol can involve:

- Urine and/or blood tests of all job applicants.
- Testing of current employees based on reasonable suspicion.
- Post-accident testing.
- Testing during and after drug or alcohol counseling.
- Random and unannounced testing in the workplace.

The issue of drug and alcohol screening in the workplace has gone through years of court tests. Two Supreme Court decisions in March 1989 approved federally established drug testing programs for certain railroad and customs employees. Referred to in legal shorthand as the *Skinner* and *von Raab* decisions, they held drug testing reasonable under the Fourth Amendment even without suspicion of drug use. The Fourth Amendment protects citizens from unreasonable searches, and drug tests had long been considered a form of search.

While these decisions may not seem applicable to the commercial motor vehicle industry, the implications are far reaching. The court found a "compelling government interest" that those who work in jobs affecting public safety (like railroad engineers) remain drug free.

Legal Perils

Betty Southard Murphy, a partner in the national law firm of Baker and Hostetler and an expert on labor law, pointed out the employer's dilemma in *Labor Law Reports*. "What is happening in our very litigious society is that employers can get sued if they do test and sued if they don't. An employer who does test for drugs or does search without warning for drugs can get sued. An employer who does not test for drugs or who does not search for drugs can get sued, but should know his employees are using drugs, as the reasonably prudent person should know, can get sued. If its employees hurt or injure others, the employer can be used for negligent retention or negligent hiring, you name it."

The legal pendulum may now be swinging toward drug testing as a way of protecting employers from exposure to lawsuits resulting from accidents their drivers may be involved in while under the influence of alcohol or drugs.

According to Professor Charles B. Craver of the George Washington University Law School, "*von Raab* and *Skinner* will make it easier for private sector employers where there are government regulations either mandating drug testing or requiring employers to take affirmative efforts to eradicate drug problems. Employers can now say they are doing it under the impetus of the federal government, and as long as the Fourth Amendment is suspended due to the national drug crisis the affected employees might lose their usual constitutional rights."

Employers can get sued for testing or not testing.

FHWA Rules

In fact, the Federal Highway Administration published a final rule in November 1988 that required motor carriers who operate commercial motor vehicles to establish and maintain anti-drug programs, including the testing of drivers. The rule was immediately challenged by six lawsuits. A preliminary injunction was issued preventing the FHWA from implementing random and certain mandatory post-accident testing of commercial motor vehicle drivers. The agency's rule requiring pre-employment and reasonable-cause testing were not affected by the restraining order. Random testing and post-accident testing, while they may be part of a company's drug testing program, are not yet required by law.

Initially, the federal requirements were only for companies with 50 or more employees. But, as of Dec. 21, 1990, the driver of any truck of more than 26,000 pounds, or vehicle carrying more than 15 passengers, or loaded with hazardous materials must be tested regardless of the number of employees the company has.

The courts have become convinced that the scope and seriousness of the drug problem in the United States create a compelling government interest that overrides certain personal rights. In addition to the toll drug use takes in human terms, there is also a purely economic motive at work behind recent federal initiatives to create a drug-free workplace. "The estimated cost to business (of drug use) is $70 billion to $100 billion a year," Mrs. Murphy said. "Just think of what our country could do if we had an extra $70 billion to $100 billion a year. We could create Utopia. We could modernize our rusting industries, we could wipe out illiteracy, we could provide housing for those who need it. . . The statistics on how employee costs soar due to drug and alcohol abuse are phenomenal. It is a fantastic waste of money."

Transportation Dangers

There is good reason to believe that the transportation industry has its share of drug problems among employees. Speaking at a news conference in December 1989, Secretary of Transportation Samuel K. Skinner predicted that results of drug tests of workers in safety-related transportation jobs still show, "an alarming amount of drug usage and positive testing." Skinner said he has been told by "very knowledgeable transit (companies) that they expect a significant usage rate once the random testing begins."

His contention is supported in part by a recent staff report of the National Transportation Safety Board released in February 1990. The report, based on a study of heavy-truck accident fatalities, showed that drug or alcohol use was responsible for 33 percent of the deaths. Other findings of the study indicated that fatally injured drivers testing positive for alcohol and other drugs were more likely to have a suspended or revoked license at the time of the accident. They were more likely to have a prior alcohol or other drug history, and to have violated federal hours or service regulations.

Workers Favor Tests

According to a recent poll conducted by the Gallup Organization (December 1989), workers generally support increased testing for drugs in the workplace. An astounding 97 percent said such drug testing was appropriate at least under some circumstances, regardless of their reservations about individuals' privacy. Mark A. de Bernardo, executive director of the Institute for a Drug-Free Workplace, a business coalition which commissioned the survey, said the results "give a green light" to employers to enact drug testing programs in the workplace. According to de Bernardo, three percent of the Fortune 500 companies had drug testing programs in 1983, and by 1988, that figure had risen to 50 percent.

Constitutional Rights

Opposing the trend toward increased testing for drugs in the workplace are groups like the American Civil Liberties Union (ACLU), some labor unions and employee rights organizations. Tom Wicker, *New York Times* columnist, wrote of their concerns that the government pressure for increased testing will erode our constitutional rights. Citing the *Skinner* and *von Raab* decisions, Wicker warned that the testing may not end with workers in safety-related jobs.

A poppy seed roll could make you test positive for cocaine.

"Polls and other expressions of public opinion. . . suggest that many Americans want to go considerably further. In the current panic about a drug epidemic, they urge mandatory, random testing of whole categories of people (high school students, for example, or prison inmates), or even of all Americans, including themselves. If society and courts yield to these importunings — some from very high government officials — wholesale violations of individual privacy and constitutional rights will result." Wicker went on to point out that if the tests include the major abuse problem in the workplace, alcohol use, they may round up a lot of current supporters of testing who consider themselves "drug free."

Reliability Questioned

The reliability of the tests themselves worry opponents, as well as how the data might be used. According to Professor Craver, the preliminary enzyme-multiplied-immunoassy technique, or EMIT test, has a fair chance of producing a false positive. "For instance, if I consumed a poppy seed roll, it is conceivable that I would show up as a positive for cocaine."

The more sophisticated gas chromotography/mass spectrometry, GC/MS test, combined with the EMIT test is much more reliable.

The reliability of tests may become an issue in negotiating labor contracts, says Craver. (Labor organizations) "would want to cover at a minimum what procedures are to be used to ensure that samples are preserved carefully, what testing procedures are to be used to ensure you don't have false positives, that you verify any questionable case and that you set your levels high enough so that you are not going to catch someone, for instance, who has been exposed to secondary marijuana smoke at a party."

What Next?

Whether the tests will end with searches for alcohol and illegal drugs is also a question. A discrimination complaint has been filed under Equal Employment Opportunity Commission guidelines against the Federal Aviation Administration. The FAA removed an air traffic controller who began taking the drug AZT after testing positive for the AIDS virus. The FAA claimed that the side effects from AZT can include dizziness, disorientation and slowed reflexes. Many medical experts contend that these side effects are rare, especially with the doses taken by the controller.

There are thousands of prescription drugs that can cause similar side effects in a percentage of the people taking them. Will employers check for beta blockers, antihistamines and antidepressants as well?

Lew Maltby, coordinator of the ACLU's Task Force for Civil Liberties in the Workplace, suggests performance testing might meet the employer's need to ensure safety and the employees' rights to privacy. Typically, performance testing employs a video screen and a control knob. The test taker tries to keep a target centered on the screen while the computer swings the target away from center using a random program. The system is designed to test reaction time, alertness and reflexes while attempting to keep a target centered on the screen. Maltby likes the way performance test protect an employee's privacy. "Civil libertarians and responsible employers alike have always been concerned about the limitations of urinalysis drug testing as a technique for reducing workplace drug abuse. They have always questioned its impact on employees' privacy. Many employers have relied on drug testing because they saw no better alternative, especially for safety-sensitive jobs. Performance testing may well be that better alternative."

According to a trucking industry spokesman, performance testing is very rare in the industry. After all, federal requirements specifically mandate drug testing. With pressure from the federal government to establish drug free workplaces and support from the courts for testing employees, it is likely that most carriers who operate commercial motor vehicles will rely primarily on drug testing to meet the federal guidelines.

Innocents Threatened

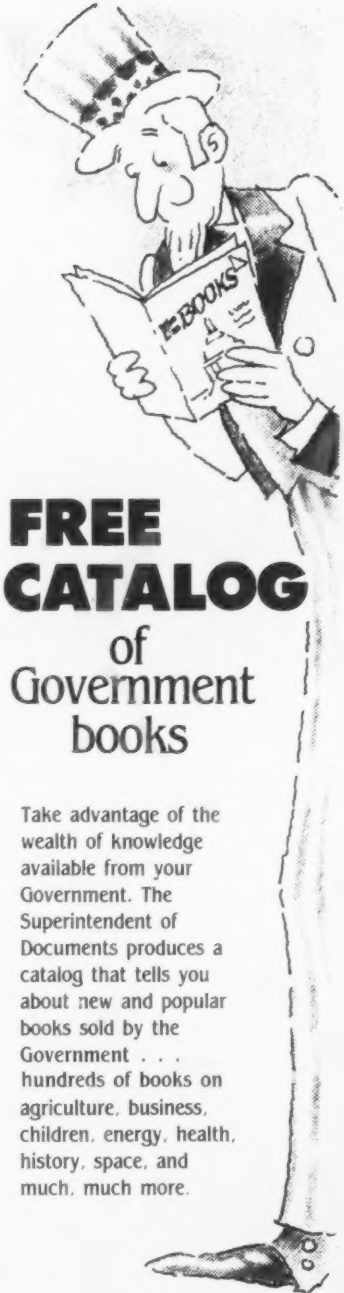
There is a danger that the war on drugs can hurt innocent people. Commenting on the introduction of a spray-can drug-detector designed for parents to detect drug use in the home, Jay Miller, executive director of the ACLU in Chicago, said, "It's a sad commentary. . . But it's part of the (government-induced) drug hysteria, and I'm ashamed of our government for creating a situation where something like this is viable."

Most experts warn that it is not enough simply to test for drugs; there needs to be a program to help employees overcome their problems and return to work as productive and safe workers.

Alan B. Slobodin, in a report prepared for the Washington Legal Foundation, urges corporate managers to make sure their programs are reasonable and fair, including "consultation with staff, prior notification of testing policy, type of drugs to be tested for, conditions of testing, use of test results, and inclusion in counseling programs."

"We could create Utopia" with the $70 billion wasted with drugs.

Betty Southard Murphy agrees. Explaining the implications of the Supreme Court's recent rulings, she hopes that employers and employees cooperate in the process."I do not think drug testing should be an adversarial labor-management issue. Nor should the issue be one which divides employers and unions. It is a public interest issue. The best approach is: if you test, do not fire someone who has allegedly been using an illegal substance. Try to get him or her help."



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KEEPING OVER-THE-HILL DRIVERS IN THE GAME

Better umpiring plus fair play

BY THOMAS FRISBIE

PROFESSIONAL athletes whose reflexes are slowing down know when it's time to retire. Coaches or managers—or even the fans—tell them.

For motorists whose vision and reaction time may be affected by age or medical problems, the decision isn't so clear-cut, and the stakes are higher. Instead of simply striking out at the plate or being beaten on a passing pattern, a driver with functional limitations could wind up in a serious traffic accident.

That's a problem an increasing number of people will face as the nation's population ages. As a result, authorities are focusing renewed attention on ways to prevent accidents involving drivers who are impaired by old age or medical problems.

"It's a problem that's not going to go away," said Michael Calvin, director of driver and vehicle services for the American Association of Motor Vehicle Administrators.

"The population is growing older, and it is creating more and more problems for the states (which must decide) how they will identify drivers who shouldn't be on the road and how they deal with individuals who might have problems, either older drivers or other people who have some sort of physical or mental limitation that would prevent them from operating a motor vehicle in a safe manner."

Death on the Diamond

The need to address those issues was illustrated on May 5, 1990, when an out-of-control black Cadillac with a 60-year-old man at the wheel killed three children and injured nine other people as it careened across a suburban Chicago park where children were playing Little League T-ball.

Bodies of children, adults and coaches were strewn across the park after the car hit a bench where the children were awaiting their turn at bat. The car then plowed across the diamond and continued on its way, eventually smashing through a wall into the reception area of a medical facility. The driver, whose car had veered off the street, was admitted to a nearby hospital with symptoms indicating he had fainted. Doctors said the driver told them he had blacked out and didn't remember the crash.

"A problem that's not going to go away."

Whether that accident could have been prevented is unknown; authorities brought no criminal charges. The case did, however, bring new attention to the issue of medically or age-impaired drivers.

"Clearly, this problem has moved higher on the agenda in the professional programs level," said Carlton C. Robinson, executive vice president of the Highway Users Federation. "I think without any question the licensing authorities of the states see this as an area of major concern."

In coming years, there will be more older drivers on the road. Now, about 12 percent of the U.S. population is over 65 years old, and that number is expected to increase to 17 percent by the year 2020. It is estimated that then there will be 50 million people in the United States who are 65 or older; 22 million who are 75 or older; and seven million who are 85 or older.

Until about age 75, older drivers tend to drive as well as middle-aged drivers do. Drivers older than 75, however, are involved in more fatal crashes per mile driven than any other age group except teen-age drivers. And people 65 or older inside a car are more than three times as likely as 20-year-olds to die from a serious crash.

Like a professional sports team that has to revamp its play book when the roster is loaded with aging veterans, transportation authorities are researching ways to make roads, vehicles and driving safer for an older population.

New Programs

New programs are under way or being considered in many states, including Arizona, California, Maine, Rhode Island and Wisconsin.

"I think the safety community—working through driver knowledge—

Under a new program in Oregon, specially trained counselors help older drivers (or those possibly impaired for other reasons) prepare for driving tests they may never have taken before. The object is to treat citizens with respect in a caring atmosphere. Those who no longer should be driving are frequently persuaded to give up voluntarily.

sees it as an area where they can be particularly effective in helping elderly drivers change their responses," Robinson said. "And the engineering community, with some exceptions, I think, sees it all as part of a family of needs to improve the communications system and reduce the complexity of the driving task. The engineering community is not unsympathetic to elderly, but simply is saying that if they can improve the system for everyone, the elderly will benefit out of proportion."

Highway design plays a key role for older drivers because their cognitive speed as well as their eyesight tends to decline, making it harder to make snap judgments, Robinson said.

"Most states do not retest eyesight in licensing renewals, but they do start at least eyesight testing at a certain age," he said. "Eyesight is one of the key areas. All of our eyesight starts to decline from mid-20s on. . . . The other problem area is probably every bit as important, but is much more difficult to test, and this is cognitive speed—decision-making with speed and accuracy. It declines with us all as we age."

Cognitive speed comes into play, for example, when a driver must judge whether there is a sufficient gap in traffic to permit a left turn.

"Elderly drivers are clearly overrepresented in left-turn accidents at signalized intersections," Robinson said. "That is usually not an eyesight problem. You have to see a gap before you can judge it, so eyesight is part of it, but mostly it is a cognitive problem, judging a gap in traffic coming toward you. A higher proportion of those accidents involves elderly drivers than the general population."

Easing Stress

Driving on interstate highways is less stressful than driving on busy urban arterial streets because many of the conflicts that require quick decision-making, such as those involved with cross-traffic, are eliminated. Engineers now are seeking ways—including easier-to-read signs and road markings—to ease the decision-making conflicts on surface streets as well. And, although current national standards have been criticized for not meeting the needs of drivers with functional limitations, many state agencies have upgraded their own standards significantly.

"Signs and markings are the methods by which most critical control information comes to the driver," Robinson said. "That is the area that I think we need to pay the most attention to."

To help coordinate research into issues affecting drivers with functional limitations, a 25-person task force was formed last year that includes researchers, physicians, occupational therapists, psychologists, engineers, state safety experts, state motor vehicle administrators, epidemiologists and optometrists.

"The problem crosses so many areas that you really need an interdisciplinary group" said John Eberhard, senior research psychologist at the National Highway Traffic Safety Administration. Eberhard is chairman of the task force.

"One of the tough things is trying to get a handle on the extent to which there is a real problem and then trying to get the right people who can define the problem and solve the problem in research and in the practical work of building better cars and highways, and set up better licensing systems."

Eberhard said he expects the task force, which grew partly out of a Transportation Research Board study called "Special Report 218: Transportation in an Aging Society," to work for three to six years. The task force was set up to help coordinate public and private research nationwide.

More Older Women at Wheel

The impact of older drivers on the road will be cushioned for the next few years because the generation of people born in the Depression years of the 1930s is not a large one, Eberhard said. But it won't be many years before the average age of drivers increases significantly.

"In the years to come, you are going to have significantly more older drivers, particularly older women. In 20 years 90 percent of those women will be driving, in contrast to today, when fewer than a half of those over 65 or a third over 80 drive."

Because women live eight to 10 years longer than men, that could mean there will be many more older drivers on the road, Eberhard said. Now, women of all ages tend to have significantly lower accident rates than men, but that may also change.

Another factor that comes into play is that drivers often begin curtailing their driving as their abilities wane. Many people, especially retired people who can more easily juggle schedules, do not drive at night, in the rain or during hours when traffic is congested. Older drivers also tend to compensate for slower reaction times by driving more slowly. Some motorists learn to adapt their driving skills by participating in such programs as the National Safety Council's Mature Driver Program, which is designed to help people keep driving safely as long as possible.

Oregon's counselors are trained in the aging process. The obviously qualified drivers are spared unnecessary tests. Drivers who may be slipping mentally or physically are quickly spotted.

The task force Eberhard chairs is not the only group studying the issue of drivers with functional limitations. The American Association of Automotive Medicine and the American Association of Motor Vehicle Administrators—under contract with the Federal Highway Administration—have formed a joint working group to explore that issue.

Elderly drivers are more likely to crash turning left.

Model Program

"We hope to come up with a model program that we can make available to states," Calvin said. The working group's goal is to design a program that steers unsafe drivers off the road, but that protects the rights of motorists who can operate a vehicle safely if proper measures are used.

"Many places don't have public transportation, so when you take individuals' driver's licenses away you are taking their freedom, their independence, and that is a very emotional thing. There is a tradeoff there between one's independence, freedom and safety of other road users, and I think there is some middle ground."

Finding that middle ground isn't easy, especially when it comes to the issue of required retesting at a certain age or requiring individuals or doctors to report people who seem to be losing their ability to drive safely.

During his 1989 campaign for governor of Illinois, Republican Jim Edgar came under fire for proposing stricter testing rules. Edgar had suggested that the secretary of state be authorized to require a driver to retake at least part of the driving test if a close relative reported in writing that a driver had a physical problem that made him a hazard on the roads. Although Edgar's plan was similar to laws on the books in many states, Democrats ridiculed the proposal, calling it a "form of humiliation" that "borders on Nazism" and saying it would turn family members against each other.

"Mandatory retesting at a certain age is resisted strenuously by the organized groups of elderly people," Robinson said. "They see it as an intrusion into their rights."

Counter Pressure

But pressure on officials also can come from another direction. For example, Roy Stewart of Lockport, Ill., thinks one way to reduce accident totals is to do a better job of screening drivers.

Stewart created the Heather Stewart Memorial Foundation to promote safety programs after his six-year-old daughter was killed and his wife and son were injured in a 1989 automobile crash. Stewart says the women who was driving the other car, which crossed a 12-foot-wide raised median strip, was a diabetic who had failed to take her medication on the day of the accident. The woman also had been diagnosed as having a brain tumor and had reported feeling dizzy while shopping prior to the accident.

Stewart thinks it should be a criminal offense to lie to authorities about medical problems. He also says doctors ought to file medical reports about ailing patients with the state, and he has been seeking to build public support for changes in state laws.

Those are the kinds of issues Calvin said his working group will analyze. One of the programs he said the group will take a close look at is Oregon's, which started a new system in 1985.

Drivers with functional limitations enter Oregon's system mostly through referral. In 1988, the most recent year for which totals are available, 2,513 drivers were referred. State public health officials referred 44 percent; police referred 33 percent, often because they had observed erratic driving; relatives, friends or other individuals referred eight percent; clerks in motor vehicle offices referred eight percent; and three percent were referred by insurance companies. Only two percent were referred by private physicians, despite a state law that physicians must report anyone who has lost consciousness or control for any reason. (Similar laws in other states requiring private physicians to report their patients also have proved to be largely unenforceable.)

Oregon Options

Drivers referred to Oregon's new program have a choice. They can go through the conventional retesting procedure, quit driving or use the new program. Of the 2,513 referred in 1988, 308 chose the new program, in which they were scheduled to meet in their home town with one of the state's four "driver improvement counselors."

"They (counselors) have some training in the aging process, and they know what to be looking for," said Peter Nunnenkamp, manager of the Driver Safety Section of the Oregon Motor Vehicles Division. "The first thing they do is to try to let the drivers know they are not there to suspend driving privileges. They are there to try to help them to keep their driving privileges."

"When you take away a license you take away freedom."

The counselor then discusses any medications the driver is taking and asks the driver a few simple questions to see how quickly he responds. The counselor also gives a vision test and a physical reaction test, which simply involves dropping a ruler between the driver's fingers.

The Oregon counselors check vision too. If a driver can't meet the usual driving standards, the state may issue a restricted license tailored to that driver's remaining abilities.

"Most people will catch it about the six-inch mark," Nunnenkamp said. "Some of these people have trouble catching the ruler at all, which might be an indicator to the counselor that out on the road, if an emergency situation came up, this person might not react fast enough."

The counselor then gives the driver a short oral quiz of six or seven questions focusing on mistakes older drivers often make, such as turning into the wrong lanes. After that, the driver takes the counselor for a short drive, while the counselor observes the driver's competence.

Sympathetic Examiners

If the counselor decides at that point that the driver needs to take the state knowledge test or driving test, he will help prepare the driver so that the experience isn't disconcerting, Nunnenkamp said.

The state of Washington has a similar program that issues special licenses for people who can't pass the usual driving test after two tries, said Ronald Selby, assistant administrator for driver's license examining for the Washington Department of Licensing. The special licenses may restrict driving to a certain area or to particular times.

"What we try to do is tailor the license to meet the needs," Selby said. He believes the issue is of enough significance nationwide that Congress will within five years enact new legislation governing drivers with functional limitations.

"What has been found is that when you deal with people up front—deal with them on a positive basis rather than as an adversary, the people respect the (state licensing agencies) for that or they give up their license voluntarily," Calvin said. "They know they are getting a fair shake." STOP

Readers Defend High School Driver Education

But many question unrestricted licensing at 16

READERS OF TRAFFIC SAFETY overwhelmingly support the idea of driver education in high school. A substantially smaller majority think 16 is the right age for obtaining a driver's license. So they said in responding to a survey published in the September/October issue.

In that same issue, Brian O'Neill, president of the Insurance Institute for Highway Safety, argued that high school driver education can cause crashes by putting young people behind the wheel sooner than would otherwise be the case. Jefferson D. Keith, executive director of the American Driver and Traffic Safety Education Association, said driver ed prevents crashes by starting youngsters out right. The real problem, Keith wrote, is that high school driver education programs are threatened by lack of support.

Survey Results

Invited to participate in the debate, 448 readers responded this way:

1. Driver education should continue to be taught in high school.

Agree	433
Disagree	11
Undecided	4

2. The driving age should be raised from 16 to 18.

Agree	164
Disagree	238
Undecided	46

3. Licenses should continue to be issued at 16, but with restrictions.

Agree	255
Disagree	147
Undecided	46

4. High school driver education in your community seems threatened by lack of official support.

Agree	173
Disagree	97
Undecided	178

Reader Comments

Many comments from readers echoed Keith's position: young people have to learn sometime, and it's better if they are trained by qualified professionals.

Officer Michael A. Wright of the Metro Police Training Academy in Nashville wishes for a mandatory driver education law in Tennessee. He wrote:

"Teeneage persons may see their parents drive, but what are they seeing? At a glance you see a person turn the key and steering wheel. . .mash on the gas to go and the brake to stop. . .We are unleashing thousands of untrained drivers every year."

"We are unleasing thousands of untrained drivers every year."

An educator from West Lawn, Pa., articulated a common view: "I think some 16-year-olds are capable of driving well. On the other hand, some 25-year-olds should never be given a license. How to weed these people out — a problem! Maybe the state should give prospective drivers a psychological test."

From the Silver State Safety Council in Las Vegas, Nev.: "I feel that drivers' licenses should be issued at 16 without restrictions. I don't think that waiting until a child is 18 will make any difference in the maturity or responsibility level of any person. It's up to parents to instill a sense of responsibility for driving."

Attitude Matters

Richard Pugh, a consulting engineer in Williamsburg, Iowa, commented: "We seldom get into trouble because we don't know *how* to drive safely. It's more often because we are careless and inconsiderate of others on the road."

Patrolman L. DiMatteo of New Jersey believes in high school driver ed, but favors raising the driving age to 18. "In my years of police experience, I have handled and/or observed more accidents involving drivers under the age of 20 than I have any other age group."

"The average 16-year-old is not mentally mature (enough) to understand the consequences of driving errors," argued another police officer, Wilton D. Nelson, of Howell, Mich. "I investigate fatal traffic crashes in our country and find that teenage deaths are over-represented."

Nancy Clark Bauder, executive director of Kansans for Highway Safety, is undecided about whether the driving age should be raised to 18. "In Kansas we are still trying to get 14- and 15-year-olds off the road!" She said a bill to accomplish that failed in the state house of representatives by one vote.

V.J. Naylor of Interior, S.D., explained the problem in the states with vast open spaces. "In South Dakota, kids can obtain restricted licenses at 14! From this perspective, age 16 seems very reasonable for licenses to be issued. Restricted licenses in South Dakota are valid for any purpose between 6 a.m. and 8 p.m. In winter this includes many hours of darkness. Since there is no school bus service in our rural area, this is almost a necessity. But is it safe?"

Proposed Restrictions Vary

Restrictions favored by respondents for the 16 to 18 age group varied widely. They included:

- Passing grade in personality profile test
- Passing grade in driver ed
- Parental approval
- School attendance
- Absence of drug or alcohol violations
- Hours 6 a.m. to midnight only
- One-year probation as a beginning driver

There was considerable agreement that high school driver education programs do not receive enough support. "Parents are not cooperative in allowing students to drive (practice) when they obtain their permits," said Steve Cochran of Batesville (Ind.) High School. The state doesn't help either. "There are not enough qualified teachers," he added. "There are no new teaching aids for driver ed. Films and texts are outdated."

Too Many Coaches?

Patricia Turner of Giddings, Tex., said, "I believe that driver's education should be a regular class conducted by a qualified instructor, not the football coach or volunteers."

A similar complaint came from Yakima, Wash.: "Too many public high school driver educators are coaches adding to their pay."

From Ladysmith, Wis., a reader complained, "Driver-ed students in our state are required to have six hours of behind-the-wheel. This is not enough time for students to become experienced drivers."

"I guess you get what you pay for."

A parent from Las Vegas wrote, "My teenage daughter was not prepared at all to drive. She didn't get enough time behind the wheel."

Popular Program

Gunard E. Bergman of Shelter Island High School (N.Y.), a driver-ed teacher for 24 years, described what can happen when a community supports driver ed. His K-12 school has only 215 students. "Ninety-nine percent of the (eligible) kids elect to take my course, which is offered during the school year, during the school day, just like any other academic subject." The students receive 66 hours of class time during a semester plus 14 hours in the training car, including six hours at the wheel.

Two years ago, when a local auto dealer discontinued renting cars for driver ed by the day, the school board provided funds to buy a training car.

"Our school district is not a rich one," Bergman said. "Many of our 2,000 population are retired on fixed incomes. A good percentage of the parents are my ex-students. They know from experience that the program is a good one, and their kids will get a solid foundation in driving skills. Most are willing to invest in their children's future. I guess you get what you pay for."

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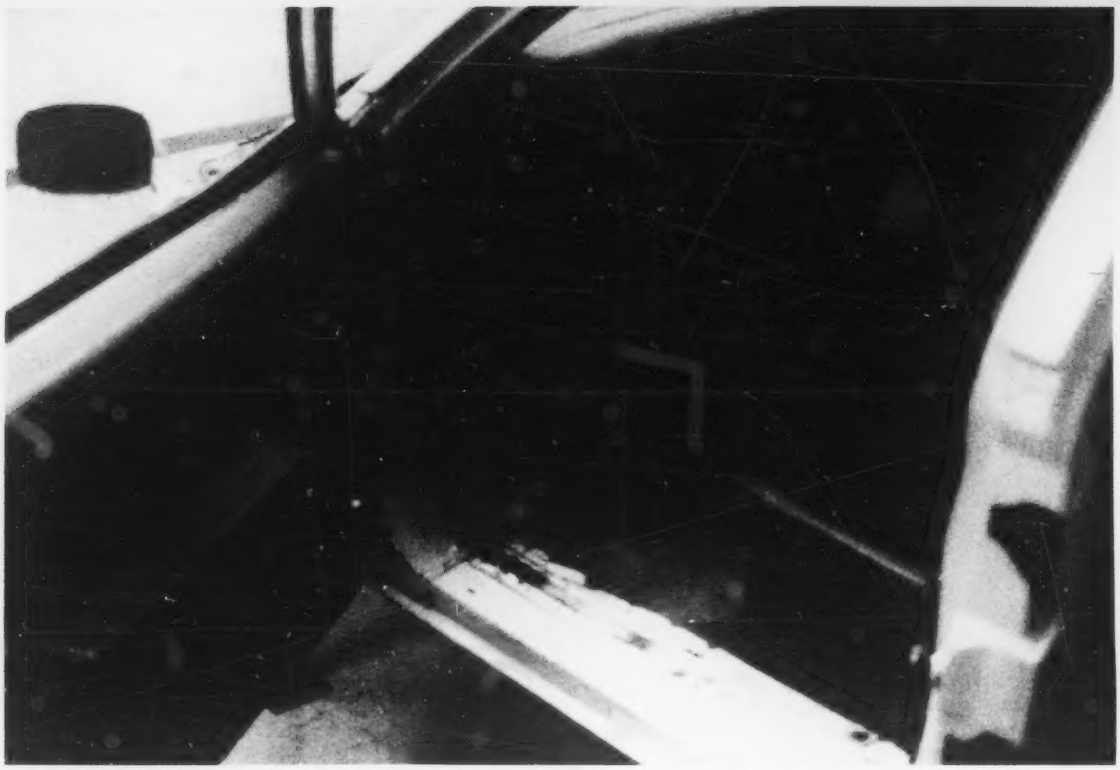


The test simulator was made from a 1978 Chevrolet Impala. At pedal height, a grid was installed with X and Y coordinates to map where drivers tend to put their feet to accelerate or brake.

Footnote To the Audi 5000

Research shows need for standard brake pedal placement

BY DR. QUINN BRACKETT and VAL PEZOLDT

INDUSTRY standards for locating car pedals could reduce traffic accidents because drivers expect such controls to be in a certain place no matter what vehicle they are driving. That conclusion can be drawn from research conducted at the Texas Transportation Institute.

The importance of ensuring that automobile foot pedals can be accurately and rapidly operated has been underscored in recent years by reports of serious accidents attributed to what has become known as "sudden unintended acceleration." Such incidents have involved a wide spectrum of vehicles under varying conditions. They are characterized by apparently uncontrollable acceleration, typically occurring immediately after putting the car into gear, that is not overcome by continuous hard braking. In many of these incidents, subsequent investigation has established that the continued acceleration was not the result of any mechanical failure. The driver just inadvertently pressed the accelerator when the intention was to hit the brake.

This seemed to be the case with the widely publicized incidents involving the Audi 5000. Audi was forced to retrofit the 5000 model with a brake interlock system that prevents shifting into gear from "park" unless the brake is depressed.

That's a significant feature. Our study found that about half of the observed drivers start their cars and put them in forward gear without a foot on the brake. Overall, 35 percent put their cars in either forward or reverse gear without using the brake.

A National Highway Safety Administration study found that the

Table 1. Proposed pedal configuration dimensions

	inches	cm
Lateral pedal separation	2.5-3.5	6.4-8.9
Vertical pedal separation	0	0
Right edge of brake to seat centerline	4	10.2
Brake width	8	20.3
Accelerator width	1.25-3.5	3.2-8.9
Vertical distance from seat to brake center	5	12.7

most likely cause of unexpected acceleration in as many as 390,000 1978-86 Audi 5000 sedans was that drivers stepped on the wrong pedal. Beginning with the 1987 model, Audi moved both brake and gas pedals 27 millimeters to the right (about an inch).

It would be unjustified to assume that the drivers in most of these incidents were fabricating their reports. They were absolutely and honestly convinced that they were applying the brake. Equally unjustified is the tendency to dismiss the incidents as human errors committed by inattentive or unskilled drivers.

Other Dangers

Although crashes involving sudden unintended acceleration have captured the attention of the media, they represent but one type of accident that can result from pedal operation errors. Crashes can also occur as a result of engaging both the brake and accelerator simultaneously, feet slipping off pedals or missing the pedals completely. Others may result from delays in foot travel because of unexpected pedal placement. All of these raise significant pedal-design issues.

Even a casual examination of the foot pedals in automobiles indicates the wide range of pedal sizes, shapes and layouts in the current passenger vehicle fleet. These pedal arrangements appear to follow no consistent pattern beyond the convention that the accelerator is located to the right of the brake pedal. Existing pedal arrangements are likely the result of designer preferences modified by space availability, linkage requirements, cost and other constraints. There appear to be no consistent design criteria either across model lines or among manufacturers.

An effort was undertaken to develop guidelines for the design and layout of automobile foot pedals that would minimize response time and activation errors, with activation forces well within the capabilities of the driving population. The research focused on both observations of pedal use and empirical studies designed to determine the size, spacing and orientation of brake and accelerator pedals in passenger vehicles equipped with automatic transmissions.

“No configuration will preclude all errors.”

Integral was the concept of expectancy. Expectancy is important to the design of any system requiring human operators because tasks are generally performed more accurately and faster when the responses they require are the most expected or “natural” ones in view of past experience. This is especially the case in confusing or stressful situations. Determination of expected or “natural” pedal locations and dimensions can assist in the development of pedal layouts that will not only minimize movement time but will maximize the likelihood of correct activation.

What Drivers Expect

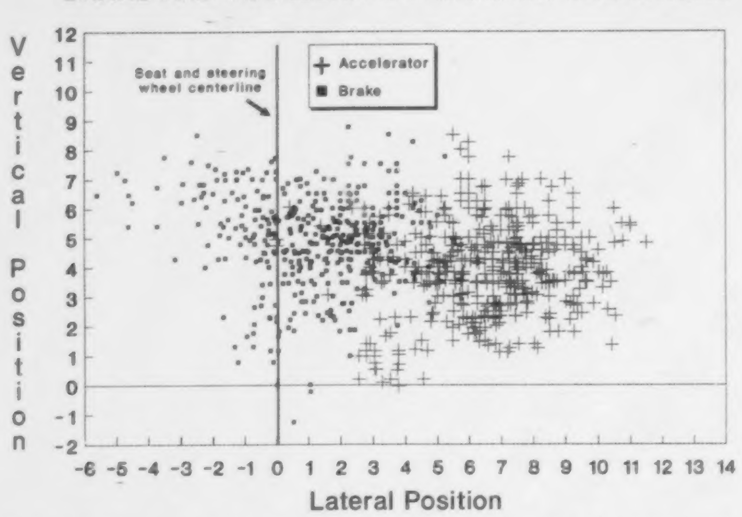
A series of studies developed information concerning the expectancies for the position of automobile foot pedals with respect to the steering wheel and driver's seat. Location of accelerator and brake pedals with respect to the plane of the floor pan, and preferred vertical separation distances between the accelerator and brake pedal were also measured. A high degree of fidelity was achieved by constructing the simulator from the passenger compartment of a 1978 Chevrolet Impala. For ease of access and transport, the front end of the car was removed forward of the fire wall. The back of the vehicle from the B pillars rearward was also removed.

Although the simulator was designed to accommodate the installation of pedals in the full range of locations found in the passenger vehicle fleet, foot pedals were not used in most of these experiments. Instead, a pedal-board was positioned at a 45-degree angle to the floor pan in the plane of the original pedals and at a height above the floor that is within the range of pedal heights currently in use. The pedal-board was marked with grid lines to facilitate measurements of foot positions and reference points. This grid formed a set of Cartesian coordinates with the Y-axis originating at the centerline of the steering column and the X-axis beginning where the pedal board intersected with the floor pan. Male and female drivers ranging from 15 to 87 years old with less than one to more than 70 years of driving experience were employed. The information developed in this series of studies was applied to the development of proposed standardized pedal guidelines.

Considerable variability is evident among drivers. Yet there is sufficient consistency in pedal location and pedal separation expectancies to allow the formulation of proposed guidelines for pedal layout that would accommodate about 97 percent of the drivers tested.

Guidelines

These guidelines were based on the



This chart (calibrated in inches) shows where drivers expect to find the accelerator and brake pedals.

expectancy data developed in this project in combination with previously available anthropometric and movement-time information. Some of the pertinent dimensions and relationships of the proposed pedal guidelines are provided in Table 1. In general, drivers expect a brake pedal eight inches wide, centered on the seat pan.

Before any proposed pedal characteristics are recommended for implementation in vehicles, it must be demonstrated that pedals conforming to the guidelines neither increase the probability of pedal operation errors nor substantially increase the movement time associated with pedal activation. To this end, a separate simulator study was conducted in which pedals consistent with the guidelines were compared to two other configurations. Although evidence of clear superiority of the recommended configuration was not found, analysis of the type and frequency of errors, near-errors and foot movement times as a function of pedal configuration suggests that pedals conforming with the recommended characteristics should result in performance that is, at worst, comparable to that of the other two configurations tested.

It is likely that some pedal errors can be expected with any pedal configuration. The likelihood that pedal errors will occur irrespective of pedal design does not imply that standardization of pedal layout is of no benefit. The potential long-term advantages accruing from the increased uniformity in pedal characteristics and layouts among different vehicles obviate the need for demonstrating short-term operational improvement attributable to the guidelines. This is true as long as the standard configuration adopted is consistent with the expectancy of much of the population.

Pedal arrangements now follow no consistent pattern.

Summary

The proposed guidelines are offered as a starting point for standardizing automobile foot pedals in order to reduce the probability of pedal errors. This pedal layout is not the only one with the potential to reduce pedal errors, and no configuration will preclude all errors. However, reducing variability among pedal layouts in the vehicle fleet will lead to a reduction in the variability of pedal location expectancies and, ultimately, to a reduction in pedal errors. The proposed pedal guidelines are based on sound human factors principles and are consistent with the results of a variety of empirical studies.

Arguments against standardization generally involve discomfort and performance problems for certain segments of the driving population if standardization leads to reduction in design options. While these arguments have merit, movement toward standardization across a large portion of the new vehicle fleet should, in the long term, help reduce pedal errors.

Dr. Quinn Brackett heads the traffic law enforcement program in the Human Factors Division of the Texas Transportation Institute at Texas A&M University. Val Pezoldt is a co-author with Dr. Brackett and others of a 16-month study sponsored by the National Highway Traffic Safety Administration. They tested more than 400 drivers during the course of the research described in this article.

The Binge Fringe

Binge drinking, heavy drinking, driving after drinking and safety belt nonuse all decrease as people age and are all more common among men than women.

These are some conclusions that emerged from a survey of risk factors in 35 states and the District of Columbia conducted by the U.S. Centers for Disease Control in 1988 and released in June 1990.

The survey defined "binge drinking" as having five or more drinks on a single occasion at least once during the past month and "heavy drinking" as having had 60 or more drinks in the past month. "Drinking and driving" was defined as having driven after drinking too much at least once in the past month, with "seat belt nonusers" being those who said they sometimes, seldom or never use safety belts.

The following chart illustrates the findings as median percentages for these characteristics by gender and age group:

	Binge Drinking	**Heavy Drinking**	Drinking and Driving	Safety Belt Nonuse
U.S. total	15.2	5.8	3.2	30.1
18-34 years	25.1	7.6	5.9	33.3
35-49 years	14.0	5.7	2.4	31.0
50-64 years	8.1	4.8	0.8	27.1
65+ years	2.5	2.3	0.0	23.1
Men	24.6	10.2	5.3	36.7
Women	7.2	1.6	1.2	24.7

The following chart shows the percentage of people in each state involved in the various risk behaviors:

	Binge Drinking	**Heavy Drinking**	**Drinking and Driving**	**Safety Belt Nonuse**
Ala.	10.7	4.2	1.6	47.8
Ariz.	16.6	6.4	2.9	35.8
Calif.	15.8	8.4	3.9	18.4
Conn.	17.3	9.0	3.8	25.2
District of Columbia	7.1	5.8	2.2	20.9
Fla.	13.6	8.5	2.5	21.5
Ga.	16.5	6.5	3.1	33.9
Hawaii	19.6	9.4	3.6	6.5
Idaho	14.0	4.3	3.2	37.5
Ill.	18.0	5.7	2.9	32.5
Ind.	15.3	5.1	3.5	30.1
Iowa	15.3	5.2	3.2	23.7
Ky.	8.3	3.6	1.4	52.5
Maine	14.7	6.9	2.9	49.2
Md.	8.9	3.8	1.5	18.9
Mass.	18.4	7.5	4.6	49.6
Mich.	23.3	7.4	4.9	22.4
Minn.	22.6	6.7	5.9	26.7
Mo.	15.3	6.5	2.7	24.9
Mont.	21.0	5.1	6.0	28.8
Neb.	17.0	6.0	4.3	51.3
N.H.	17.6	10.8	3.5	52.4
N.M.	13.4	5.7	3.0	20.2
N.Y.	13.6	5.1	1.8	24.1
N.C.	11.9	5.1	3.1	13.1
N.D.	21.7	3.3	5.9	60.5
Ohio	17.0	6.3	3.6	27.8
Okla.	10.4	5.4	3.4	33.6
R.I.	8.2	5.8	2.6	47.0
S.C.	9.8	4.3	1.4	48.7
S.D.	19.3	4.1	6.0	67.4
Tenn.	9.0	4.7	2.2	32.5
Tex.	16.9	7.0	3.9	15.4
Utah	7.3	3.4	1.5	33.3
Wash.	18.3	5.9	4.0	16.0
W.Va.	9.1	4.3	1.4	56.1
Wis.	25.3	8.6	6.2	23.4

Safety Belts Squeeze Costs

Employers who invest in buckling up reap a big payoff

BY CONNIE SOMA

AS BUSINESSES enter the 1990s with many economic uncertainties, managers are looking for innovative and creative strategies to cut costs.

One of the best cost-reduction methods is right under their noses. Or, to be more precise, it's on their laps and shoulders in the form of safety belts.

Motor-vehicle crashes are the leading cause of on-the-job fatalities and cost businesses nearly $2 billion annually in medical coverage, disability payments and lost productivity. Employee safety belt use programs can help to reduce these costs substantially. In fact, American businesses can save $105 for every dollar invested, according to a recent study conducted by the state of Michigan.

The goal of employee safety belt programs is, obviously, to save lives by getting people to buckle up. But how can you modify the behavior of an entire work force? Merely hanging a few buckle-up posters on the office wall won't do it.

Successful employee safety belt programs need a commitment from top management to educate and motivate employees to use safety belts. Incentives such as free gifts or small cash prizes for safety belt use can motivate employees to buckle up, while an ongoing safety belt information campaign will reinforce the necessity of buckling up.

Employee Incentives

A small electronics company offered each of its employees a free gift if company safety belt use rates exceeded 90 percent in six months. Employees also were provided periodic safety belt facts and statistics as a reminder of the importance of buckling up. The program resulted in a 93 percent use rate in just three months. The company estimated that it saved $26,000 in disability payments alone, and it had a safe and productive work force.

Employee safety belt programs work in large corporations as well. Ford Motor Company developed a program offering workers incentives and providing education. The net result was a savings of an estimated eight lives, 300 serious injuries and $10 million in the program's first five months.

A comparison conducted by the National Highway Traffic Safety Administration of automobile accidents involving employees from two competing firms illustrates the benefits of employee safety belt use. An employee at one company hit a utility pole at 30 mph without a safety belt. He suffered broken ribs and was out of work for 12 days. His employer had to pay $7,500 in hospitalization, salary continuation and lost productivity because of his absence.

Michigan officials discovered a return of 105 percent.

An employee from a competing firm hit a utility pole while traveling 25 mph, but a safety belt prevented injury. He did not miss any work and his employer did not incur any costs.

Law Not Enough

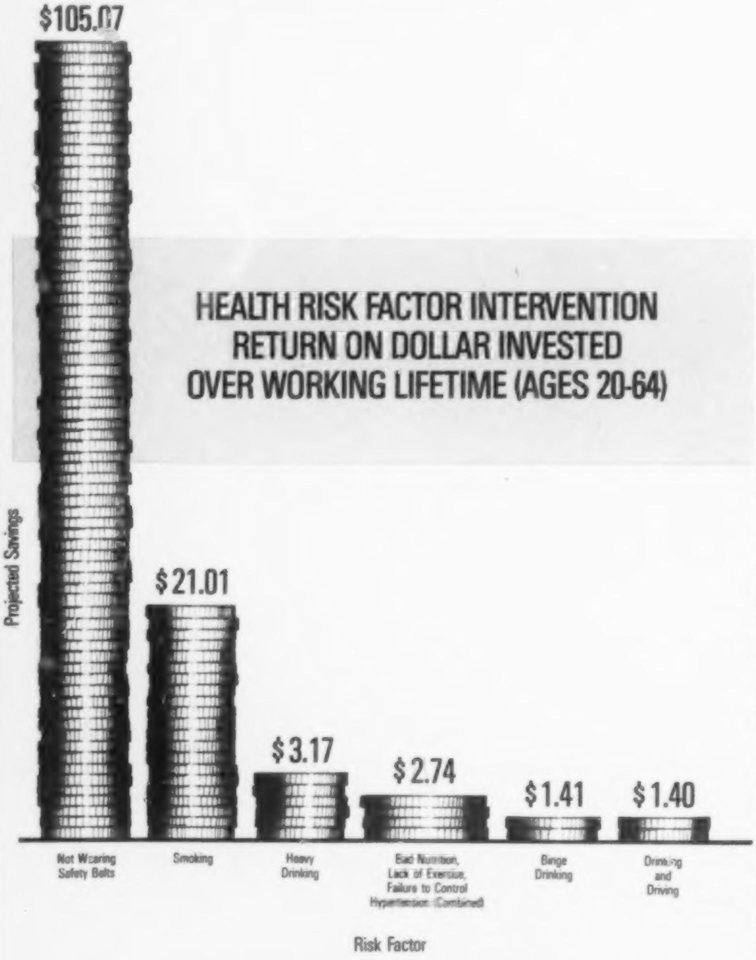
Some managers might balk at corporate safety belt use programs, believing a mandatory law in their state will sufficiently increase employee safety belt use. Most managers will agree, however, that government regulation is not a universal cure-all. While Michigan's safety belt law has increased use from 14 to 47 percent, safety belt use rates could be much higher.

However great the financial rewards of employee safety belt use programs, the bottom line is lives saved and injuries prevented by safety belt use. Nationally, more than 15,000 people have been saved by safety belts since 1983, and thousands more have been spared serious injuries.

Businesses need to take a pre-emptive stance and implement employee safety belt use programs on their own. Waiting for further government regulation could cost businesses money and, more importantly, lives.

Connie Soma is executive director of the Michigan Coalition for Safety Belt Use. For more information about corporate safety belt programs, contact the Coalition at 5685 Highland, Bldg. 1, Pontiac, MI 48054 (313) 674-4661.

The Facts Behind the Figures



Here's how the Michigan study arrived at the astonishing estimate of 105 percent return on investment for companies that promote safety belt use by employees.

The authors of the study noted that Michigan spends $1,902 a year per capita on health care, or 12.4 percent of the state's personal income.

With the conquest early in the century of diseases like tuberculosis, typhoid fever and diphtheria, the major threats to safety and health now come from chronic and degenerative diseases and accidents. Because lifestyle and behavior have so much to do with these conditions, the big savings in future expenditures will result not so much from improved treatment methods as from prevention.

From epidemiological studies, it it possible to calculate a "population attributed risk" (PAR) for each condition. For instance, in Michigan the PAR deaths before age 65 that could be blamed on smoking totaled 3,444, based on 1983 figures.

Ford estimates it saved $10 million in five months.

The comparable toll for non-use of safety belts was 546. (Michigan's safety belt law had not taken effect when this part of the study was compiled.)

Power of Persuasion

Just as people can be persuaded to stop smoking, to drink less, to get more exercise and eat foods that are good for them, they can be talked into buckling their safety belts. Many companies promote all these ideas for sound business reasons.

The cost of such programs can be estimated, and their future results predicted.

The Michigan study said, "If action is taken in the key risk factor areas, as suggested in this paper, Michigan could recoup much of the estimated $18.4 billion of lost income, $14.7 billion in medical care expenditures and $846 million in lost state income tax revenue that is projected to occur over the lifetime of Michigan's adult population."

Some factors are more difficult to control than others. Because quitting smoking is a lot harder than remembering to buckle a safety belt, the intervention costs are much higher. Besides, the good effects of not smoking don't become apparent till years later, when individuals don't have a heart attack or get cancer. With safety belts, the life-saving effect begins the first day.

Putting it all together on the computer, the Michigan study found that the money spent to promote safety-belt use is five times as cost-effective as an anti-smoking campaign.

No-Wait State

North Dakota tracks driving records on-line

BY RENE BARNHARDT

Computers help achieve the lowest fatality rate in 40 years.

WHEN ERRANT drivers are brought to justice in North Dakota, the court can depend on having up-to-date information available on their driving records.

Far from the hustle and bustle of the highly populated states, North Dakota has developed a computer system aimed at keeping bad drivers from causing more accidents. Although the state is sparsely populated, North Dakota's law enforcement agencies have been diligent in their efforts to patrol every mile of highway.

In 1989, North Dakota had 76 fatal crashes, with a total of 81 fatalities. This is the lowest fatality rate since the war years of the 1940s, when gasoline was rationed and few traveled our roads.

The Drivers License and Traffic Safety Division of the North Dakota Department of Transportation developed a computer system that has aided law enforcement officers and courts in their efforts to keep offenders off the road and to monitor their driving records and needs.

Monitoring Education

The first phase of this development began in 1983 when North Dakota implemented administrative *per se* license sanctions. State officials recognized a need to automate the monitoring of the education or treatment of traffic offenders. They felt that before the offenders were allowed to drive again officials would have to verify that any education or treatment program required, to assure a safer driver upon reinstatement, had indeed been completed.

Computers give us the ability to track the evaluation of drivers, their enrollment in programs and their completion of education or treatment. If an offender discontinues a program, we are notified. Any temporary driving privileges that may have been granted are removed.

The completion of recommended programs has proven a positive step toward converting offenders into safe drivers.

On-Line Data Entry

The second phase of the computer system development became effective in August 1985. Prior to that time, records were entered or revised through batch entry, which caused delays in updating the computer data base.

North Dakota saw that faster input of data was needed to assure that the latest information was available to be used by law enforcement officers, the courts and the transportation department itself. We were able to accomplish this with a menu-driven computer system that allows Drivers License and Traffic Safety Division staff to input documents and update records on-line.

This on-line capability covers changes in driver's license status, violations and point assessments, as well as the status of participation in education and treatment programs.

Rene Barnhardt is supervisor, suspensions and records, of the Drivers License and Traffic Safety Division, North Dakota Department of Transportation.

Vision '90s Sets New Records

By KRISTEN JASSEN

cross your heart...
Buckle Up!

National Safety Council staffer imprints exposition information on response card of visitor interested in "Buckle Up" materials.

MORE THAN 17,000 safety and health professionals, exhibitors and guests gathered in Las Vegas for the National Safety Council's 78th annual Congress and Exposition. This year's event was the largest in Council history. "VISION '90s" set the tone for a look into the future of safety and health.

At the Opening Session, Council President T. C. Gilchrest outlined the Council's goals for the 1990s. He said that "changing technology, more people, increasing government regulation and new hazards will challenge the National Safety Council through the decade."

Gilchrest noted that the Council will assume an even more active role as society witnesses changes in economic development and reform; improvements in education; increased industrial productivity; advances in communication and transportation; new efforts to preserve the environment; and greater attention to family and human concerns.

World events affect everyone, Gilchrest added, and it is the Council's responsibility to acknowledge and emphasize changes in safety and health needs in order to respond to people's concerns.

Dole Calls for Action

Former U. S. Secretary of Labor Elizabeth Dole, who delivered the Opening Session keynote speech, applauded the Council's hard work and agreed that there is much to do as the safety and health movement faces new challenges.

Dole called the overall state of workplace health and safety "much improved." She said repetitive strain injuries will be a priority for the Department of Labor in coming years.

Dole also urged the National Safety Council to join with her in calling on all employers to establish substance abuse prevention programs. "America is fighting drugs in the streets, in our schools and in our families," Dole said, "and since 70 percent of all adult illegal drug users are employed, we must fight drugs in our workplaces as well."

A Fond Farewell

Outgoing Board Chairman David P. Curley highlighed Council progress during the three years of his stewardship. Newly-elected Chairman John A. Woodhall, Jr., presented Curley with a special recognition plaque and cited the Council's growing importance in the field of safety and health in the '90s.

The grand finale of the Opening Session featured 200 children. They carried huge balloons that expressed the Congress "VISION '90s" theme in vignettes and song. As the children released the balloons which then sailed upward, the curtain came down to a standing ovation.

Sessions Draw Crowds

U. S. Surgeon General Antonia Novello and Gerard Scannell, assistant secretary of labor for the Occupational Safety and Health Administration (OSHA) were keynote speakers on Tuesday and Wednesday.

This year Congress featured 20 blockbuster programs and 169 specialty sessions that were planned by Council staff in conjunction with leading safety and health professionals throughout the country. The scope and quality of these sessions provided appreciative learning experiences, which were reflected in record high delegate attendance. Additionally, there were 17 professional development seminars that attracted 1,400 attendees.

Traffic and Transportation

Blockbuster sessions included discussions of "The New Transportation Policy" featuring Tom Larson, administrator, Federal Highway Administration and Adele Derby, associate administrator of the National Highway Traffic Safety Administration. The new National Transportation Policy initiated by U.S. DOT Secretary Skinner will affect all modes of transportation for decades into the future. Derby spoke on the public/private partnership in highway traffic safety. James B. Kolstad, chairman, National Transportation Safety Board, gave a report entitled "Policy Issues and Recommendations from the National Transportation Safety Board."

Exhibitors demonstrate hazard warning lights and other safety devices. Exposition-goers enjoyed hundreds of such "how-to" presentations.

The "Implementation of the Commercial Drivers License (CDL)" session featured speakers from the Federal Highway Administration who provided an overview and from the California Department of Motor Vehicles who discussed Implementation—Results & What You Can Expect."

Speciality sessions covered many topics including:

- Pedestrians and older drivers
- Work zone safety; liability for failing to adequately train school bus drivers
- Mandatory drug testing
- Highway grade crossing safety
- Mass transit's role in disaster planning
- Tort liability & risk management
- OSHA's proposed rule for occupant protection & driver training
- Drugs in the workplace: occupational hazard
- Lessons from transportation safety
- Innovations in traffic records technology
- Basic fleet administration safety program
- Drug and alcohol testing for short line railroads
- Computer applications in transit safety; driver education; motorcycle helmets
- Special education driver training for school bus drivers

Driver Improvement Programs showcased a new program in Las Vegas: the Defensive Driving Course - Attitudinal Dynamics of Driving (DDC-ADD). This program targets repeat traffic-law offenders and drivers who know the rules of the road and have the skills to follow them, but choose not to do so. High on the list of new DDC offerings is the "Need to Know" drug-awareness program that meets U. S. Department of Transportation substance-abuse training requirements. Another new program, "Coaching the Emergency Vehicle Driver - Ambulance," is designed to train ambulance drivers. Similar courses for fire truck and police vehicle drivers are in the development stage.

At the National Safety Council's Board of Directors meeting held at Congress, a new policy related to cargo container weights was approved.

The Council recommends to the Federal Maritime Commission that all maritime cargo containers be placarded with actual weight before departing ocean terminals. Overweight containers cause safety problems and exceed bridge, road and rail load requirements.

New Council Program

The First Aid Institute, a new Council training program in first aid and CPR, was a highlight at Congress. This up-to-date, state-of-the-art course generated a high degree of interest and is expected to be a popular addition to the Council's safety training programs.

Thousands Exhibit Products

The 1990 Exposition was headquartered in the Las Vegas Convention Center. More than 654 exhibiting firms occupied 1,169 booths. Thousands of the newest, most innovative and beneficial safety and health equipment and services were on display. The individual exhibit booths and aisles were alive with activity as attendees learned the details of how these forward-thinking exhibitors could help them respond to the endless challenges in the safety and health industry.

"Congress Night Out" featured the top billing Las Vegas entertainer, Wayne Newton. Proceeds benefited the Foundation for Safety and Health, the Council's fundraising arm, which provides grants for safety and health programs developed both within and outside the Council.

This year's sellouts included the Exposition, the Council - DuPont seminar, several Personal Development Seminars and "Congress Night Out." Next year's Congress will be held in New Orleans, Oct. 6 - 10, 1991.

Use "All Tools" To Trim Traffic Toll

BY JIM CASTELLI

THE DEPARTMENT of Transportation has distributed a draft "Highway Safety Action Plan for Short-Term Accident Countermeasures." A follow-up to a June 1990 symposium on the subject, the plan contains recommendations for federal and local governments, and private organizations concerned with traffic safety.

The recommendations, which aim for short-term gain by 1992, focus on five areas:

- Pedestrian safety improvements
- Driver behavior and performance
- Roadway and roadside safety
- Commercial motor vehicle safety
- Corridor safety improvement

The plan's background notes that "while the motor vehicle fatality rate has been dropping, the forecasts of continuing increases in highway travel provide a strong warning that past accomplishments cannot weaken our resolve to improve the safety of our highways. We must significantly lower the mileage rate (of fatalities per million vehicle miles) just to hold our own in absolute numbers of highway fatalities." The most recent rate is 2.2 deaths per 100 mvm.

The plan says recommendations emphasize two themes: 1. interdisciplinary cooperation among safety professionals and public officials 2. comprehensive management practices.

"Many of the recommendations from the symposium stress that all tools available to the safety professional — engineering, enforcement and education — need to be used to effectively reduce the traffic death and injury toll."

Here is a summary of the plan's major recommendations:

I. Pedestrian Safety Improvements

- Initiate a national pedestrian awareness campaign and establish pedestrian safety as a priority area. The Federal Highway Administration (FHWA) and National Highway Traffic Safety Administration (NHTSA) will direct their policies and resources toward pedestrian safety, including launching a media campaign and developing national statistics on pedestrian safety.
- Provide engineering improvements to improve pedestrian safety and improve the "conspicuity" of pedestrians.
- Improve safety education for pedestrians.
- Improve enforcement of pedestrian laws and ordinances.

II. Driver Behavior and Performance

- Provide improved signing, marking and delineation. FHWA has started a national initiative, "The Road to Better Signing," which focuses on sign inventories, sign replacement and refurbishment, routine and systematic evaluation of sign performance, and sign maintenance effectivenes.
- Use more "active" devices. FHWA will develop or contract for a synthesis of existing research to identify potential "active" devices — such as variable message signs and traffic-activated signals — which could reduce the number of accidents.
- Improve traffic-control device maintenance through management programs.
- Increase driver knowledge of traffic-control devices and highway situations.
- Improve work zone safety management practices.
- Provide better shoulder delineation through the use of rumble strips and textured-shoulder pavements. FHWA will ask each state not now using shoulder texturing to launch experimental projects.
- Use site-specific overhead lighting to reduce night-time accidents. FHWA will summarize current state and local lighting practices and make recommendations on the basis of those practices.
- Promote additional improvements in vehicles for better crashworthiness and crash avoidance. NHTSA will conduct a public information campaign to promote fleet purchase of vehicles equipped with optional safety equipment such as air bags and anti-lock brakes.
- Increase speed and other moving violation enforcement through work zones and other high accident locations. FHWA will work with the International Association of Police Chiefs to identify the highway training needed for state police academies.

III. Roadway and Roadside Safety

- Establish a program to upgrade substandard guardrails.
- Develop and analyze accident record systems that identify roadside features contributing to accidents. FHWA will develop "severity indices" to calculate the expected severity of collisions with roadside features.
- Work with utility companies to relocate or eliminate utility poles with a history of being hit.
- Identify and prioritize a list of high accident locations for corrective action.
- Allocate additional funds for accident countermeasures.
- Establish a nationwide program to have state and local governments set maintenance condition standards for safety-related items. FHWA will collect or develop model standards, policies and programs for maintaining and upgrading traffic control devices and roadside safety features.

IV. Commercial Motor Vehicle Safety

- Reauthorize the Motor Carrier Safety Assistance Program, which is due to expire at the end of 1991.

- Increase education for the public, motor vehicle drivers and motor carriers, especially new companies.
- Enhance the identification of problem carriers and drivers (fully implement SAFETY/NET) in order to increase selective enforcement.
- Ensure uniform and comprehensive accident statistics (adopt National Governors Association accident data elements).
- Provide training for non-MCSAP officers. NHTSA and FHWA will develop a new training program for enforcement of motor carrier safety regulations.
- Increase the seriousness of out-of-service order violations.
- Increase mobile road enforcement. States should determine whether the geographic locations of fixed inspection and scale facilities lend themselves to easy bypassing by drivers.
- Increase safe areas and inspection facilities.

V. Corridor Safety Improvement

The plan lists the consensus of participants on corridor safety at a symposium workshop:

- Establish a multidisciplinary safety team that would provide coordination, review physical inventory and policies, and recommend improvements.
- Provide selective enforcement campaigns targeted at speeders, impaired drivers and non-users of safety belts, in safety blitzes.
- Improve delineation of a roadway through vertical and horizontal delineation devices.
- Develop a constant and consistent public information program that includes media support, educates the public and keeps the public aware of safety issues.
- Make minor engineering improvements such as channelization, access control and pavement surface corrections.
- Optimize signal timing and phasing.
- Create a comprehensive highway safety community campaign that involves a cross-section of public and private sector people, including employers and political leaders, to support highway safety initiatives.
- Within practical limitations, provide a clear-roadside program, removing obstructions and fixed objects.
- Provide signs with clear and visible messages to the motoring public under all environmental conditions.
- Improve response time and upgrade the capabilities of emergency medical services and other emergency services.

Side Impact Collisions

Transportation Secretary Samuel Skinner has announced a new federal safety requirement designed to reduce the risk of death or serious chest or pelvic injury from side impact collisions involving passenger cars.

The new standard will require that all new cars comply by Sept. 1, 1996. Manufacturers may use any means — such as energy-absorbing door interior padding, reinforced side structures or a combination.

"This is the most significant improvement in motor vehicle safety since the department's 1984 requirement for air bags or automatic safety belts," Skinner says. "We estimate that more than 500 fatalities and 2,600 serious injuries will be prevented each year when all cars have this added protection."

"Next to frontal crashes," he says, "side collisions are the . . . leading cause of death and injury. Each year, 8,000 people die and another 24,000 are injured seriously in these crashes."

Under the new standard, cars will be tested for compliance with the tested vehicle travelling 15 mph being struck by another car moving 30 mph. Test dummies placed in the front and rear seats on the struck side must meet certain chest and hip injury limits.

Ten percent of each carmaker's fleet must meet the standard after Sept. 1, 1993, This will rise to 25 percent the second year and 40 percent in the third year. All cars would be covered by the fourth year.

Most-Wanted Recommendations

The National Transportation Safety Board (NTSB) has issued its first "Most Wanted List" of safety recommendations. The board singled out 18 of its previous recommendations for emphasis.

"It is my hope that our 'Most Wanted' program will generate increased public, government and industry awareness and support for these recommendations," NTSB chairman James L. Kolstad says. "This program will be, in a way, a call to action."

According to Kolstad, the board adopted the 18 recommendations in no order of importance. But he says a personal "favorite" is a 1984 recommendation calling for passage of laws in all states allowing for administrative revocation of drivers' licenses. Those laws give officials the right to revoke licenses if drivers refuse to take sobriety tests or are found to be intoxicated.

"We found it's the single most effective way to get drunken drivers off the road, and drunken drivers account for 50 percent of all the nation's highway fatalities," Kolstad says. Twenty-seven states, as well as Puerto Rico, the Virgin Islands and Guam, have not fully implemented such laws.

The NTSB will review its Most Wanted list twice a year and add or drop recommendations as is appropriate. Since its establishment in 1967, the board has issued almost 8,200 non-binding safety recommendations to government, industry and private organizations to help prevent transportation accidents.

The proposals, aimed at the federal government, regulatory agencies, state governments and private industry, include suggestions to fight drunkenness on land, water and in the air.

Other traffic-related recommendations on the Most Wanted list are:

- The installation of adjustable upper-anchorage points for automobile shoulder harness seatbelts, issued in 1988.
- Fatigue and hours-of-work recommendations for all transportation modes, issued in 1989.
- A schoolbus safety recommendation, issued in 1989.
- Heavy commercial truck recommendations, issued in 1989.

Higher-Speed Crash Tests

NHTSA's New Car Assessment Program will crash test 34 1991 model vehicles into a fixed barrier at 35 mph. That speed is five mph faster than the speed prescribed for compliance with several existing federal standards. The tests are designed to indicate relative levels of safety performance and occupant protection for vehicles of the same type and similar weight.

The test uses crash dummies with instruments that monitor impact force attached to their heads, chest and upper legs. Each dummy uses the test vehicle's standard safety equipment — automatic safety belts, manual belts or air bags.

NHTSA says it will continue to examine several aspects of the program, particularly the relationship of these test results to real-world crashes and injuries.

Vehicles to be tested are:

- Chrysler New Yorker, Caravan, Shadow and Acclaim
- Ford Escort, Explorer (MPV), Probe and Taurus
- General Motors Century, Beretta, Blazer (MPV), Camaro, Caprice, Corsica and Saturn
- Honda Accord Sedan, Accord Wagon and Civic
- Hyundai S-Coupe
- Isuzu Rodeo (MPV) and Stylus
- Mazda (MPV) and Protege
- Mitsubishi Gallant
- Nissan 300ZX, Pathfinder (MPV) and Sentra
- Suzuki Sidekick (MPV)
- Toyota Corolla, Previa, Tercel and Pickup 4X4
- Volvo 240DL
- Volkswagen Jetta

Child Safety Seat Recall

NHTSA is urging owners of certain child safety seats made by Evenflo to obtain a free repair kit and install a new buckle assembly on seats being recalled by the company because they don't meet NHTSA's standards.

The recall involves more than three million seats sold between April 15, 1985, and April 22, 1990. The seats have a black buckle-housing and red push-button belt release.

"The problem with these seats is that at times the buckle can look buckled and feel buckled even when it is not completely latched," says NHTSA administrator Jerry Curry. "This can give users a false sense of security that the child is protected. However, if the buckle is not completely latched, it can release during a crash and substantially reduce the protection provided the child."

Curry says owners should call Evenflo at 1-800-837-8926 or write the company at 1801 Commerce Dr., Piqua, OH 45356.

The recall affects infant-only seats with model numbers 441, 442, 443, 444, 445, 446, 448, 456, 458, 201 and 202; convertible (infant/toddler) seats with model numbers 401, 402, 403, 404, 405, 406, 407, 408, 409, 411, 412, 414, 415, 416, 417, 453, 454, 221, 223 and 228; and booster seats with model number 470, 471 and 242.

EVENTS

Traffic Management of Freeway Emergencies

JANUARY

27th Command and Management School — Jan. 7-March 22, University of Texas at Dallas — Southwestern Legal Foundation, Box 830707, Richardson, TX 75083-0707. (214) 690-2394.

Analysis and Evaluation of Traffic Safety Problems — Jan. 9-10, University of California — Institute of Transportation Studies, Richmond Field Station, 1301 S. 46th St., Bldg. 452, Richmond, CA 94804. (415) 642-4111.

Hazardous Materials Transportation Training — Jan. 9-10, Seattle; Jan. 16-17, Cleveland — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611. (312) 527-4800, extension 8407.

Traffic Management and Planning for Freeway Emergencies and Special Events — Jan. 13, Omni Shoreham Hotel, Washington, DC — National Research Council, Transportation Research Board, 2101 Constitution Ave. N.W., Washington, DC, 20418.

Symposium on Work Zone Traffic Control — Jan. 18-19, Orlando, Fla. — Federal Highway Administration, (703) 285-2517; or Bellomo-McGee Inc., 8330 Boone Blvd., Vienna, VA 22182. (703) 847-3071.

FEBRUARY

Principles of Fleet Administration Safety — Feb. 4-6, Chicago — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611. (312) 527-4800, extension 8425.

DDC-8 — Feb. 4-6, Chicago — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611. (312) 527-4800, extension 8527.

Hazardous Materials Transportation Training — Feb. 6-7, Minneapolis/St. Paul; Feb. 20-21, Los Angeles; Feb. 27-28, Indianapolis — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611. (312) 527-4800, extension 8407.

DDC-4 — Feb. 7-8, Chicago — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611. (312) 527-4800, extension 8527.

DDC-Attitudinal Dynamics of Driving — Feb. 13-16, Chicago — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611. (312) 527-4800, extension 8527.

DDC-Professional Truck Driver — Feb. 25-27, Chicago — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611. (312) 527-4800, extension 8407.

Society of Automotive Engineers International Congress & Exposition — Feb. 25-Mar. 1, Detroit — Communications Division, SAE International, 400 Commonwealth Dr., Warrendale, PA 15096. (412) 772-7131.

MARCH

Motor Fleet Accident Investigation Workshop — Mar. 4-5, Chicago — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611. (312) 527-4800, extension 8405.

APRIL

DDC-Professional Truck Driver — Apr. 15-17, Chicago — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611. (312) 527-4800, extension 8527.

DDC-Coaching the Mature Driver — Apr. 18-19, Chicago — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611. (312) 527-4800, extension 8527.

NEW PRODUCTS

Markings For Rainy Nights

BEAD MARKERS

VISIBEAD® traffic markings were found to be at least twice as visible on rainy nights as standard bead markings in a study conducted by the Department of Civil Enginering of the University of North Carolina at Charlotte.

The larger size of the Visibead spheres is given credit for their increased visibility. "Large glass beads can withstand the dimming [that results] when smaller beads are covered by a water film," according to the manufacturer. — **Potters Industries Inc.,** 20 Waterview Blvd., Parsippany, NJ 07054.

HIGHWAY SIGNS

The German-designed GEKA safety reflectors are designed to improve the visibility of slow and stopped vehicles at night and during bad weather, a frequent cause of accidents.

According to the manufacturer, the warning panels have "reflective efficiency up to 10 times that of conventional reflectors." The reflective signs are recommended for trucks, trailers, mobile homes, vans, and oversized and slow-moving vehicles.

Triangular section reflectors are affixed to a metal backing plate, forming a square reflector panel. The sections are assembled in a pattern of diagonal, alternating red and white reflective strips. — **Panda Technik,** 35656 Ashford, Sterling Heights, MI 48312.

ASBESTOS FILTERS

Clayton Associates Inc. has patented the Safe-Filter-Change™ disposable filter in its brake cleaning equipment and asbestos vacuums to protect mechanics from asbestos exposure while servicing brakes.

The design allows users to safely remove and dispose of the new filters without exposing themselves or the environment to asbestos dust. — **Clayton Associates Inc.,** Farmingdale, NJ 07727-0589.

HEAVY-DUTY TIRES

Goodyear's new radial commercial truck tire, the Unisteel G-286 Super Single, is designed for Class 8 trucks that operate under constant heavy loads. The tire can be used on all wheel positions, including steering, and can replace dual tires on heavy trucks that operate in severe conditions both on and off the road, according to the manufacturer.

The tire accommodates heavy-duty applications by dump trucks, construction vehicles, cement mixers, refuse hauling trucks, fertilizer trucks and logging trucks. The tire's "broad footprint" distributes a truck's load over a wide contact area on the ground, reducing the risk of getting stuck, says Goodyear — **Goodyear,** Akron, OH 44316-0001.

WARNING LIGHTS

Whelen Traffic Advisor™, a line of high-intensity supplemental signaling devices, features a bar holding eight halogen lamps. The device has arrow signals at both ends that flash in four distinct patterns to alert oncoming traffic. Models can be mounted on a vehicle's rear deck, under a lightbar, or as a trunk lid pop-up signal. Built-in and heavy-duty models are also available. — **Whelen Engineering Co.,** Route 145, Winthrop Rd., Chester, CT 06412.

ELECTRONIC SWITCHES

The ET7115C Series electronic one-circuit time switches are designed to control lighting, HVAC, refrigeration and other energy-consuming loads. The system has been used successfully to regulate traffic around schools whose schedules often change, reducing work hours formerly spent regulating the switches by hand.

The system can be programmed at the beginning of the year to adjust for new dates and holidays, even automatically adjusting for leap year and daylight-saving time. Built-in memory eliminates the need to reprogram the switches during power outages.

The Department of Public Works of North Las Vagas, Nev., which installed the electronic switching system for its 24 school crossings, claims the system has saved more than 140 hours per year in time formerly spent switching the units on and off manually. — **Intermatic,** Intermatic Plaza, Spring Grove, Il 60081.

TIRE SEALANT

A new water-soluble, latex-glycol sealant injected into tires seals tread punctures up to ¼ inch in size. Cushman Tire Sealant eliminates flat tires on utility vehicles, mowers and other grounds maintenance equipment, according to the manufacturer. The fluid solution coats the interior surface of the tire as the vehicle is driven. When a leak or puncture occurs, escaping air draws the solution to the hole, where particles are forced into the leak, sealing it.

When the object that caused the puncture is removed, additional sealant fills the hole to form a permanent plug, eliminating the need to remove the wheel or repair the tire.

The compound is available in five-gallon containers with a calibrated pump or in 32-ounce bottles — **Cushman Inc.,** P. O. Box 82409, Lincoln, NB 68501-9971.

SPRING BRAKE

Sepac Inc. introduces its spring-engaged brake model that features long-life non-asbestos friction material and a simple design. The new brake is spring-engaged to turn on and electomagnetically released off. Single and multiple disc models range from three inches in diameter (with a static torque rating of five pounds per foot) to 12 inches in diameter (with a double disc static torque rating of 900 pounds per foot). Square models ranging from two inches to 4.5 inches are also available. — **Sepac,** 453 E. Clinton St., Elmira, NY 14901.

LIBRARY

Vehicle Immersion Victims

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TWO-WAY STREET

Proud To Be Safe-Driving Pro

As a DDC instructor and a tractor-trailer driver and instructor for more than 25 years, I took offense at your article calling for "Drug-Free Truck Drivers" (Sept./Oct. 1990).

The article quoted an associate professor from Florida who claims "the average truck driver thinks that one out of four truck drivers regularly drives under the influence of illegal drugs."

These are not statistics, they are opinions. This article geared toward safety professionals uses these opinions to create the impression that the highway is filled with a bunch of us gear-jamming, double-clutching drunks and druggies.

If one out of four of us are using drugs and alcohol, why do 90 percent (as stated in your own article) of us support post-accident tests? The only reason many people are suspicious of random testing is the horror stories circulating in the industry regarding the slipshod testing performed by certain of the testing labs.

My personal opinion is that any truck driver who operates while under the influence of drugs or alcohol should be dragged behind his truck down a long stretch of rough highway. But the public, and the safety-professionals, should be aware that the vast majority of truck drivers they share the road with are competent, law abiding, family-oriented men and women who are proud of being safe-driving professionals.

I certainly hope that you print this letter so that your readers can share opinions from both sides of this serious concern.

John Del Santo
Safety Instructor
Bayside, N.Y.

Any Comments?

"Two-Way Street" is *your* forum; a place for ideas and opinions on issues important to traffic safety professionals as well as comments about articles in previous issues of TRAFFIC SAFETY.

Please address letters to "Two-Way Street," TRAFFIC SAFETY Magazine, 444 N. Michigan Ave., Chicago, IL 60611.

Letters may be edited for clarity or because of space.

Stamp Out Misinformation

I have long been interested in why many people don't use safety belts. We are all familiar with the "they wrinkle my dress" and "I feel confined" caliber of excuses. But I read a letter to the editor of a nursing journal *(RN)* that reaches new depths in inanity. Some teenaged girls actually thought that wearing a safety belt would give them breast cancer!

Traffic safety professionals should be aware that the level of misinformation about safety belts is much, much greater than any safety professional I know has previously considered. It is important to find out just what misinformation there is and the source (if possible), and correct it as necessary.

Sharon Lynn Campbell, M.A.
Certified Safety Professional
S.L.C. Communications
St. Louis, Mo.

Charge More for Tests

To obtain a driver's license in California, you pay a $10 filing fee. This covers three written tests and three driving tests, if necessary. This is the biggest bargain anywhere. With today's salaries and other expenses, the motor vehicle department must show a deficit.

If one requests a more meaningful driving test than the present one administered, the standard reply is: "We do not have the funds to hire additional examiners."

The filing fee to obtain a driver's license should be $25. An additional charge of $10 should be made for the first written test. Should there be a failure, the charge for administering a second written test should be $15. If there is a third test necessary, the fee should be $20.

A meaningful driving test should cost $30 for the first attempt. Should there be a failure, the charge for a second attempt should rise to $45. If a third try is necessary, the fee should be $60.

Let us connect the above fee schedule to your articles for and against high school driver education. Our teenagers have the great desire to learn to drive, but they like to get it over with as cheaply as possible. If the motor vehicle department gets out of the "bargain basement" and charges prudent rates and administers a meaningful driving test, students will have more respect for the department's function.

Kurt J. Herrmann
Los Angeles, Calif.

What If They Suspect YOU?

More drug testing is coming. Do you approve?

MANDATORY drug-testing in the workplace continues to gather force. The U.S. Supreme Court has upheld drug testing for certain railroad and customs employees. Under Federal Highway Administration rules, drivers of commercial motor vehicles must be tested before employment and when there's reasonable cause.

Many companies in other fields have installed drug-testing programs, partly for fear of liability in case an employee involved in a mishap turns out to have been under the influence of drugs or alcohol. Polls show more support among employees for workplace testing than one might expect.

As a traffic-safety professional, you are probably involved one way or another in combatting driving under the influence of drugs or alcohol. Still, people are saying that blood and urine tests for everybody may be going too far. What do you think?

After answering the questions, you can just tear out this page and send it in. Or if you have to share your copy of TRAFFIC SAFETY with others, you may want to photocopy the page. Then, if we haven't provided enough space, you can write additional comments on the back.

We'll publish what we find out in a future issue. Mail your responses to:

TRAFFIC SAFETY Survey
National Safety Council
444 N. Michigan Ave.
Chicago, IL 60611

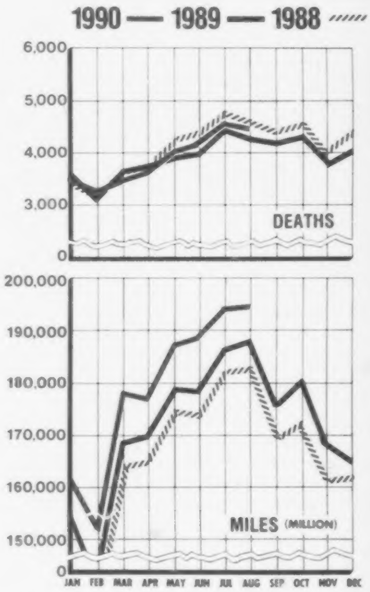
	Yes	No	Only for workers who drive or operate dangerous equipment	Undecided
1. Do you think your own employer should require drug tests for new employees before they are hired?				
2. Should your employer conduct random drug tests among existing employees?				
3. Should your employer test for alcohol as well as illegal drugs like cocaine, heroin and marijuana?				
4. Do you feel confident that a drug testing program installed by your employer would (or does) protect you from false results?				
5. Do you care that a blood/urine testing program could reveal other information about you, such as the prescriptions you might be taking?				
Comments:				

August Traffic Deaths Up 5%

BY MARY E. JOHNSTON and URSULA ZUEHLKE

TRAFFIC SUMMARY

Month	Deaths 1990	Deaths 1989	Change
August	4,480	4,250	+ 5%
8 months	31,050	30,600	+ 2%
12 months (Ending August 1990)	47,350	47,820	− 1%



Motor-vehicle deaths in August totaled 4,480, an increase of 5 percent from the August 1989 total of 4,250.

Deaths for the eight-month period ending August totaled 31,050, an increase of two percent from the 1989 eight-month total of 30,600.

Disabling injuries for 1990 are estimated to be slightly more than 1,100,000. These are injuries resulting in disability beyond the day of the accident and do not include minor injuries, which probably totaled as many more.

The cost of motor-vehicle accidents for 1990 is estimated to be about $48 billion.

Based on preliminary vehicle mileage reports for this year, the estimated annual mileage death rate is 2.3 (deaths per 100 million vehicle miles).

State Experience

Among the 48 states reporting August experience, 17 states had fewer deaths than in the preceding August, and 28 states showed increases in deaths. Three states and the District of Columbia showed no change in the number of fatalities. For the eight-month period, 21 states and the District of Columbia showed decreases in the number of deaths, while 27 states showed increases.

Rhode Island	−23%
New Hampshire	−20%
Vermont	−17%
Iowa	−14%
Utah	−14%
Nebraska	−13%
Massachusetts	− 8%
Minnesota	− 7%
Maine	− 6%
California	− 6%
Michigan	− 5%
Ohio	− 5%
North Carolina	− 4%
New York	− 4%
New Mexico	− 4%
Texas	− 3%
Illinois	− 2%
Oregon	− 2%
Idaho	− 1%
West Virginia	− *%

State Traffic Deaths

Deaths are reported by state traffic authorities. All figures are preliminary. To ensure proper comparisons, 1988 and 1989 figures cover the same reporting period as those for 1990.

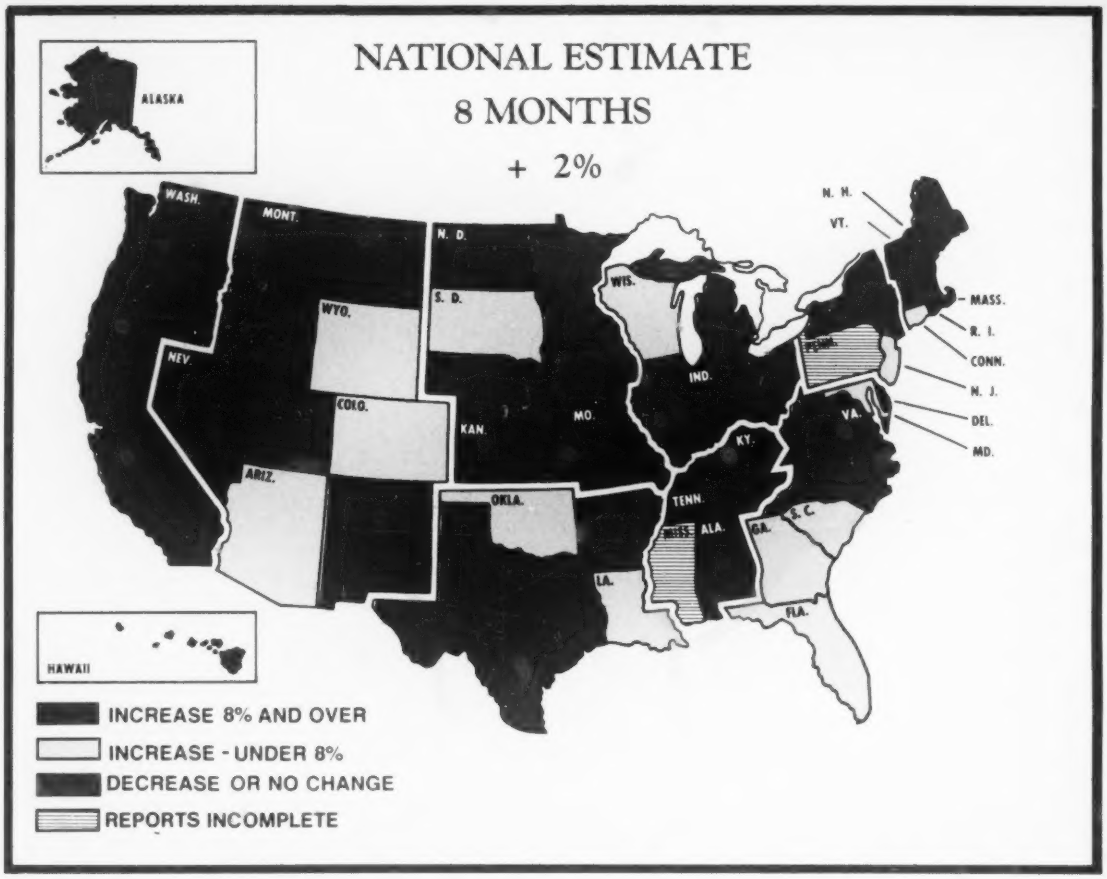
States shown in CAPS had fewer deaths in 1990 than they did in 1989 for the same reporting period.

Population Rate: U.S. population rate and state population rates are the estimated annual number of deaths per 100,000 population. U.S. population rate is based on the July 1, 1990, population estimate; state population rates are based on July 1, 1989, population estimates, U.S. Bureau of the Census, Washington, D.C.

Mileage Rate: The number of deaths per 100 million vehicle miles of travel.

STATE	NO. OF MOS.	DEATHS IDENTICAL PERIODS			PERCENT CHANGES		1990 POP. RATE	1990 MILE. RATE
		1990	1989	1988	1989 TO 1990	1988 TO 1990		
Total U.S.	**8**	**31,050**	**30,600**	**31,680**	**+ 2%**	**– 2%**	**19.0**	**2.3**
Alabama	8	726	654	659	+ 11%	+ 10%	26.4	2.5
Alaska	8	68	50	56	+ 36%	+ 21%	19.4	2.9
Arizona	8	550	532	594	+ 3%	– 7%	23.2	2.4
ARKANSAS	8	386	409	369	– 6%	+ 5%	24.1	2.9
CALIFORNIA	8	3,177	3,385	3,212	– 6%	– 1%	16.4	1.9
Colorado	8	350	335	352	+ 4%	– 1%	15.8	2.0
Connecticut	8	254	252	305	+ 1%	– 17%	11.8	1.5
Delaware	8	96	72	115	+ 33%	– 17%	21.4	2.2
D. OF C.	8	35	55	41	– 36%	– 15%	8.7	1.6
Florida	8	2,042	2,010	2,018	+ 2%	+ 1%	24.2	2.9
Georgia	8	1,047	1,037	1,022	+ 1%	+ 2%	24.4	2.4
Hawaii	8	110	92	99	+ 20%	+ 11%	14.8	2.0
IDAHO	8	150	152	172	– 1%	– 13%	22.2	2.6
ILLINOIS	8	1,045	1,064	1,191	– 2%	– 12%	13.4	2.0
Indiana	8	686	628	675	+ 9%	+ 2%	18.4	2.0
IOWA	8	290	336	353	– 14%	– 18%	15.3	1.9
Kansas	8	309	258	305	+ 20%	+ 1%	18.4	2.3
Kentucky	8	571	528	538	+ 8%	+ 6%	23.0	2.6
Louisiana	8	502	499	552	+ 1%	– 9%	17.2	2.1
MAINE	8	135	143	159	– 6%	– 15%	16.6	1.8
Maryland	8	499	470	510	+ 6%	– 2%	15.9	1.9
MASSACHUSETTS	8	390	426	448	– 8%	– 13%	9.9	1.4
MICHIGAN	8	989	1,040	1,062	– 5%	– 7%	16.0	1.9
MINNESOTA	8	336	362	400	– 7%	– 16%	11.6	1.3
Mississippi	7	387	390	393	– *%	– 2%	25.3	3.1
Missouri	8	737	684	701	+ 8%	+ 5%	21.4	2.4
Montana	8	142	119	133	+ 19%	+ 7%	26.4	2.7
NEBRASKA	8	171	196	169	– 13%	+ 1%	15.9	1.9
Nevada	8	223	189	187	+ 18%	+ 19%	30.1	3.4
NEW HAMPSHIRE	8	104	130	113	– 20%	– 8%	14.1	1.6
New Jersey	8	579	568	660	+ 2%	– 12%	11.2	1.4
NEW MEXICO	8	335	349	318	– 4%	+ 5%	32.9	3.3
NEW YORK	8	1,292	1,344	1,189	– 4%	+ 9%	10.8	1.8
NORTH CAROLINA	8	876	916	970	– 4%	– 10%	20.0	2.3
North Dakota	8	62	50	70	+ 24%	– 11%	14.1	1.7
OHIO	8	983	1,033	1,048	– 5%	– 6%	13.5	1.8
Oklahoma	8	418	413	417	+ 1%	+ *%	19.4	1.9
OREGON	8	394	401	427	– 2%	– 8%	21.0	2.4
Pennsylvania	6	755	879	791	– 14%	– 5%	12.5	1.9
RHODE ISLAND	8	54	70	93	– 23%	– 42%	8.1	1.4
South Carolina	8	671	650	675	+ 3%	– 1%	28.7	3.3
South Dakota	8	102	100	103	+ 2%	– 1%	21.4	2.3
Tennessee	8	779	694	792	+ 12%	– 2%	23.7	2.4
TEXAS	8	2,085	2,140	2,116	– 3%	– 1%	18.4	2.1
UTAH	8	169	197	213	– 14%	– 21%	14.9	2.0
VERMONT	8	57	69	70	– 17%	– 19%	15.1	1.5
Virginia	8	743	622	672	+ 19%	+ 11%	18.3	1.8
Washington	8	564	399	519	+ 41%	+ 9%	17.8	1.8
WEST VIRGINIA	8	299	300	287	– *%	+ 4%	24.2	3.1
Wisconsin	8	535	514	536	+ 4%	– *%	16.5	1.9
Wyoming	8	85	83	102	+ 2%	– 17%	26.8	2.4
Puerto Rico#	2	86	103	114	– 17%	– 25%	18.9	—
Virgin Islands#	8	16	7	12	+ 129%	+ 33%	43.2	—
– CANADIAN PROVINCES –								
Alberta	8	263	289	291	– 9%	– 10%	24.9	—
British Columbia	7	351	309	338	+ 14%	+ 4%	28.4	—

#Not included in the TOTAL U.S. death count or rates.
*Less than 0.5%.


NATIONAL ESTIMATE
8 MONTHS
+ 2%
ALASKA
HAWAII
WASH.
MONT.
N. D.
S. D.
WYO.
NEV.
COLO.
ARIZ.
KAN.
MO.
OKLA.
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VT.
MASS.
R. I.
CONN.
N. J.
DEL.
MD.
INCREASE 8% AND OVER
INCREASE - UNDER 8%
DECREASE OR NO CHANGE
REPORTS INCOMPLETE

MOTOR-VEHICLE DEATHS AND CHANGES TOTAL U.S.

	Deaths				Percentage Changes				
					Corresponding Month			4-Month Moving Average +	
Month	1987	1988	1989	1990	1988-1990	1988-1989	1989-1990	1988-1989	1989-1990
January	3,301	3,390	3,540	3,480	+ 3%		− 2%		− 5%
February	2,997	3,130	3,090	3,290	+ 5%		+ 6%		− 3%
March	3,517	3,600	3,660	3,440	− 4%		− 6%		− 3%
April	3,621	3,760	3,720	3,620	− 4%		− 3%		− 1%
May	4,264	4,210	3,900	4,020	− 5%		+ 3%		0%
June	4,279	4,320	3,980	4,150	− 4%		+ 4%		− *%
July	4,472	4,720	4,460	4,570	− 3%		+ 3%		+ 2%
August	4,815	4,550	4,250	4,480	− 2%		+ 5%		+ 4%
8 Months	31,266	31,680	30,600	31,050	− 2%		+ 2%		
September	4,300	4,370	4,190			− 4%		− 6%	
October	4,535	4,520	4,310			− 5%		− 5%	
November	4,169	3,980	3,770			− 5%		− 5%	
December	4,020	4,350	4,030			− 7%		− 5%	
TOTAL	48,290	48,900	46,900	47,350 ‡		− 4%			

The 1987 figures are from the National Center for Health Statistics. The 1988, 1989 and 1990 figures are National Safety Council estimates.

+ Four-Month Moving Average is based on changes between the totals for four months instead of one month. For example, the August figure shows the change between the totals for May 1989 - August 1989 and May 1990 - August 1990, etc. Adding several months together tends to smooth out single-month changes which may be affected by differences in the number of weekends in a month from one year to the next, random variations, etc.

‡ Deaths for the 12-month period ending August 1990.

*Less than 0.5%.

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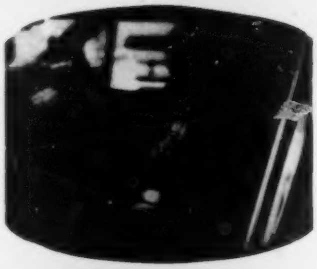

Aléjese de
la manada

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Training
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What would you do if . . .

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a driver's lawyer claims
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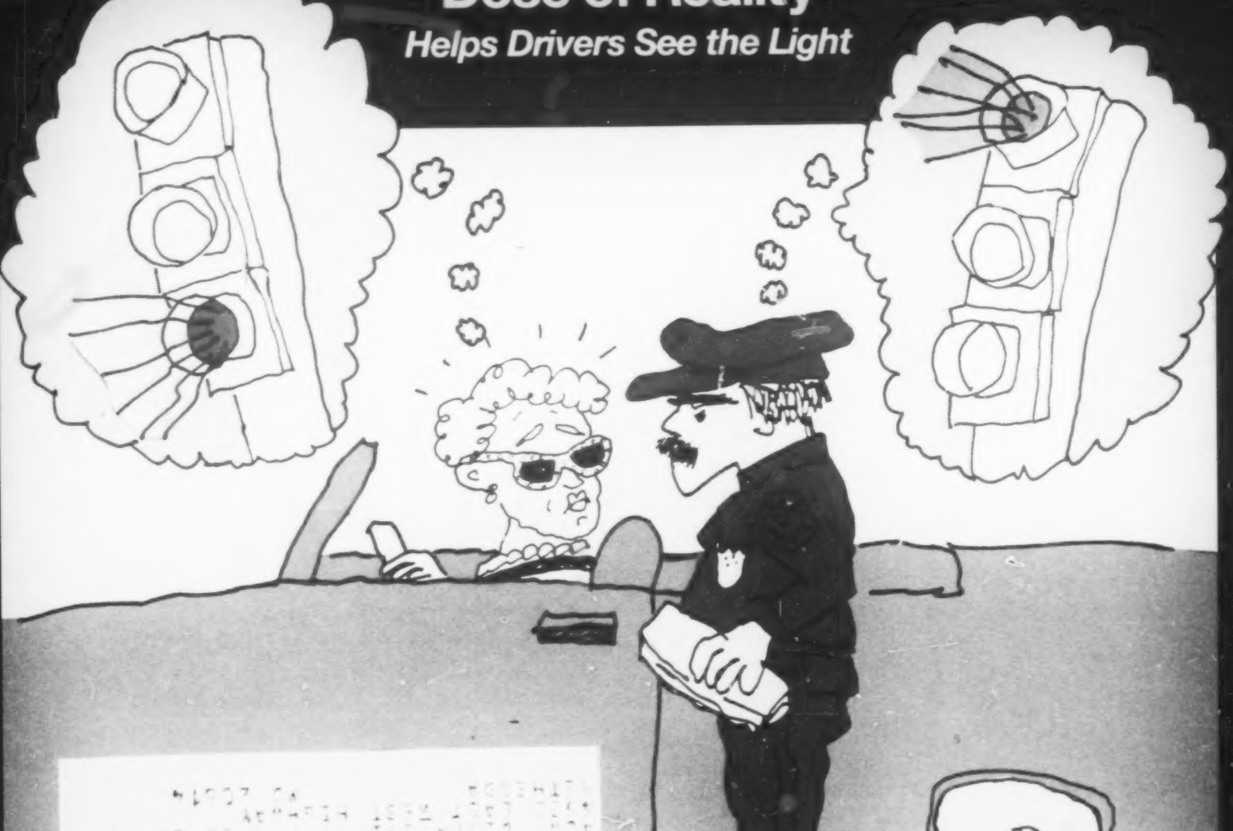

• Hazmat on the Highway • DWI s Sentenced to Treatment

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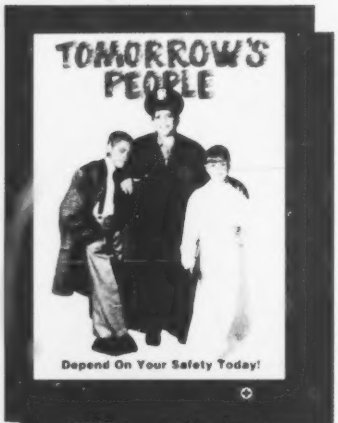
MARCH/APRIL 1991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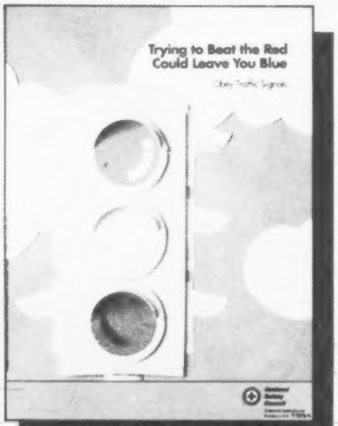
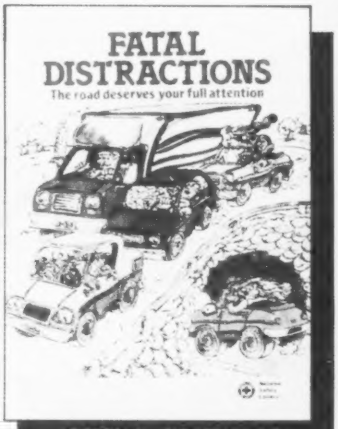
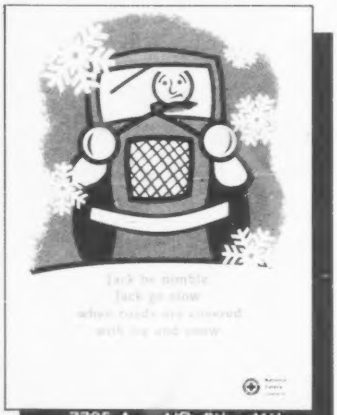
7736-B 4/C 17 x 23


Trying to Beat the Red Could Leave You Blue
Obey Traffic Signals

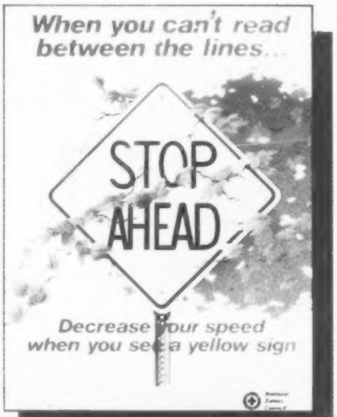
T-7673-A 4/C 8½ x 11½


FATAL DISTRACTIONS
The road deserves your full attention

75775-A 4/C 8½ x 11½


Jack be nimble
Jack go slow
when roads are covered
with ice and snow

7725-A 4/C 8½ x 11½
7726-B 4/C 17 x 23


When you can't read between the lines...
STOP AHEAD
Decrease your speed when you see a yellow sign

7571-A 4/C 8½ x 11½

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March/April 1991
National Safety Council

TRAFFIC SAFETY

Vol. 91 No. 2

Dose of Reality Helps Drivers See the Light 6
Defensive driving course works wonders with repeat offenders.
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TODAY'S TRAFFIC

Consumers Look for Safety in Cars

Injury protection was found to be the most important factor, other than price, influencing car-buying decisions in a nationwide survey conducted by the Roper Organization for the Insurance Research Council.

Of 1,496 U.S. households surveyed, 68 percent said the "degree to which the car protects people from injury in accidents" would be a "very important" factor in their decision to buy a particular car. An additional 24 percent said injury protection would be a "somewhat important" factor. Forty-eight percent said they want air bags in the next car they buy, although only 2 percent currently drove cars equipped with the safety devices.

The second most important factor influencing a car purchase was operating cost. Sixty-three percent rated a car's operating cost as very important; 28 percent rated it somewhat important.

More than half of households polled judged the following as very important influences in their buying decisions: cost of insurance (59 percent), estimated miles per gallon (53 percent), repairs (53 percent) and the car's acceleration and handling characteristics (52 percent).

In 1982, a similar survey found more people considered operating costs (62 percent) and gas mileage (60 percent) very important compared with injury protection (59 percent).

Grants to Develop Transportation Management Manual

The Institute of Transportation Engineers (ITE) was awarded a $140,000 grant by the Urban Mass Transportation Administration (UMTA) to produce a manual to help public and private agencies develop transportation demand management strategies for suburban work sites.

"While many of the commonly used strategies have been effective in reducing congestion," says UMTA Administrator Brian W. Clymer, "both UMTA and ITE believe we have not utilized these strategies to their full potential. One reason is because few written materials are available to the people responsible for the design, implementation and evaluation of these programs."

Under the terms of the grant, ITE will develop, test and refine information for the manual, including case study reports from eight suburban work sites and instructions for managing and evaluating traffic demand management programs. The guidebook will also provide advice on planning, market research, project development, operations, promotion and evaluation/monitoring.

ITE President Richard F. Beaubien and transit council-chairman Thomas F. Larwin received the grant at the institute's 60th annual meeting in Orlando in August.

Safer School Buses Rewarded

Ohio school districts will receive a 10 percent discount on their liability insurance from Nationwide Insurance for each school bus that has improved visibility features.

"We want to avoid accidents, especially those in which children are struck by their own school bus," says John R. Harper, a Nationwide vice president and manager of the company's Columbus, Ohio, region.

Between 200 and 300 students are injured in Ohio each year in school bus accidents, according to the Ohio department of education. Within the last 10 years, 13 Ohio students were struck and killed by their school bus or by another vehicle passing the bus.

"The discount is meant to encourage school districts, when they replace aging buses, to select buses that provide drivers with the best possible view of youngsters outside the bus," Harper says.

The visibility standards require that a school bus driver be able to see an object on the ground that is 10 feet in front of the front bumper.

"We believe buses with shorter, steeper hoods and with floor-level glass panels in front of the front door are safer," Harper says. "Those features give drivers a better view of the children as they enter and leave the bus."

Noise Control Inside Cars

Lightweight materials used in new cars allow designers to create sleek and futuristic-looking automobiles but also produce an unpleasant feature — low-frequency engine and road noise inside the vehicle, according to several papers presented at the annual meeting of the American Society of Mechanical Engineers (ASME). Researchers are looking for ways to reduce these noise levels.

Efforts to fortify car bodies to dampen noise proved unsuccessful because the added weight of the damping materials reduced performance. Stiffening the car bodies was unpopular because it put restrictions on design.

Advanced noise control and acoustics technology are producing better results. One of the most promising of these, called the adaptive digital filtering system, was developed by a team of British researchers. The technology, say the investigators from the Institute of Sound and Vibration Research (ISVR), University of Southampton, operates on reference signals received from the tachometer, which measures engine crankshaft rotation.

Experiments using the computerized filtering system on a small, lightweight automobile resulted in a 10- to 15-decibel reduction in engine noise. And in a computer-simulated test, performed on the same automobile, to determine the system's ability to control road noise, reseachers reported a reduction of 5 to 10 decibels.

The ISVR research team is continuing its research but say "the groundwork has been laid" on noise control in cars. "Initial computer simulation results have demonstrated that significant reductions in internal noise can be achieved," they say.

Cars and Global Warming

Technical breakthroughs, changes in consumer behavior and considerable expense would be required to reduce or stabilize the production of carbon dioxide gas from U.S. cars, according to a study conducted by GM engineer Charles A. Amann. Before restrictions are imposed, he says, more research needs to be conducted by scientists throughout the world "to verify the nature and seriousness of the global warming issue."

Carbon dioxide, produced by the burning of fossil fuels, is considered the major contributor to the "greenhouse effect," a condition that scientists say may eventually lead to warming of the planet.

"We estimate that U.S. autos account for about 3 percent of the worldwide global warming potential," Amann says.

Progress is already being made in reducing car emissions, according to Amann. Over the past 15 years, improvements in fuel economy have cut in half the level of tailpipe carbon dioxide emissions from the average new U.S. car. Amann estimates that these emissions will decrease about 20 percent for each new car over the next decade.

Another greenhouse gas, chlorofluorocarbons, produced from the refrigerant used in automobile air-conditioners, will be eliminated "by phasing in a new refrigerant over the next decade," he says.

If global warming concerns do materialize, the following are potential alternatives to the burning of fossil fuels and their drawbacks:

- Electric vehicles. Powered from nuclear sources, requiring fail-safe reactors and public acceptance of nuclear plants.
- Alcohol-fueled vehicles. Biomass production of methanol or ethanol from trees and plants requires significant land use.
- Hydrogen-powered vehicles. Using hydrogen gas made from water requires greater land use and an advance in either nuclear electricity or solar cell technology.

Do Truckers Need Radar Detectors?

Radar detectors are being used in more than half of all U.S. trucks and tractor-trailers, according to an Insurance Institute for Highway Safety study of more than 1,700 trucks on interstate highways in 17 states.

The study found 59 percent of tractor-trailers and 50 percent of trucks carrying hazardous materials were equipped with the devices.

Institute President Brian O'Neill expresses concern about these statistics. "The only reason truckers use radar detectors is to evade speed limit law enforcement," he says. "Truckers who obey speed limits don't need such devices. Claims that they help truckers and other motorists monitor their speeds are ridiculous."

Trucks using radar detectors were more likely to be speeding than those without the devices, "no matter what the speed limit was," the study found.

One-and-a-half times as many trucks equipped with detectors were traveling at least 10 miles an hour over the 55-mph speed limit on interstate highways, compared with unequipped trucks. Where speed limits were 65 mph for trucks, three times as many trucks with radar detectors were traveling at least 10 mph above the speed limit, compared with their unequipped counterparts.

The use of radar detectors is illegal in only two states, Connecticut and Virginia, and the District of Columbia. In New York the devices are banned for large trucks.

SHORTCUTS

Crash Prevention Is The Goal

Avoiding vehicle crashes before they occur will be the focus of highway safety in the 1990s, according to General Motors automotive safety engineer Robert A. Rogers. He calls for renewed efforts "to keep crashes from happening, as well as to reduce the consequences when they do happen."

Crash avoidance was the major goal in the early days of cars, highlighted by the development of such safety design features as hydraulic brakes and improved lighting. However, in the last 30 years, concentration has been on making vehicles "crashworthy" to reduce injuries when an accident does occur. Rogers recommends combining these traffic safety strategies.

The principal crash-avoidance efforts should focus on modifying types of behavior, such as drunk driving, that contribute to crashes, Rogers says. It is estimated that consumption of alcohol is a factor in nearly half of all fatal collisions in this country. Reducing the incidence of impaired driving requires stronger laws and enforcement of those laws, as well as education to underscore the dangers of drinking and driving, Rogers says.

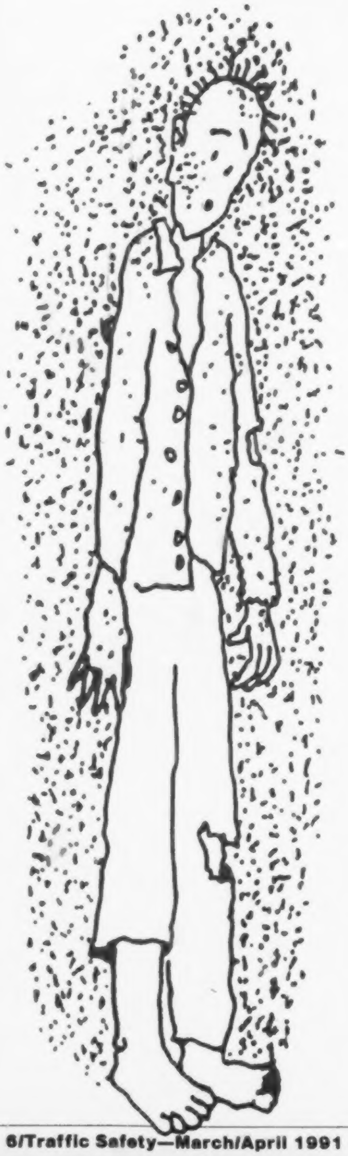
Developing new technologies to make driving easier and safer can also help reduce the number of crashes that occur, he says. For example, anti-lock brakes improve a driver's ability to steer the vehicle during hard braking.

The campaign to increase safety belt use is perhaps the most well-known traffic-safety program. Its efforts have paid off. It is estimated that 50 percent of Americans are now buckling up, a jump from 10 percent just a decade ago. By next year, the U.S. hopes to reach a 70 percent rate for safety belt use.

Rogers warns that the increasing use of air bags in vehicles "should not deter further gains in safety belt use." "The most important thing to remember about an air bag is that it is a supplement to the safety belt," he says.

Dose of Reality
Helps Drivers See the Light

Defensive driving course works wonders with repeat offenders.



By Kate Marie Dabaco

In a last ditch effort to stave off a driver's license suspension, repeat offender John Schmidt enrolled in a National Safety Council course designed to improve more than just his abilities behind the wheel.

In the past six months, the 18-year-old high school drop-out and chronic job hopper had managed to rack up three moving violations. He was in serious jeopardy of losing his driving privileges. The Secretary of State gave Schmidt a choice: Change your behavior or lose your license. Schmidt chose the former and signed up for the Council's "Defensive Driving Course — Attitudinal Dynamics of Driving" (DDC-ADD).

The course changed more than Schmidt's driving skills. It changed his outlook on life. Upon course completion, Schmidt believed he'd been given a new lease on life and told his instructor, "Because of this class, I'm going back to school because I know I have choices. I'm not a victim (of the law or society)."

Driving Is a Privilege

John McCarthy, manager of Program Development and Training for the Council's Driver Improvement Programs, says DDC-ADD is based on these principles of responsibility and reality. "It knocks the proverbial chip off many participants' shoulders and helps them overcome feelings of being victimized by the law," says McCarthy.

"Student reaction is often that 'they (the police) are out to get me,' " he says. "The instructors come back at them with, 'They are out to get your behavior. That is what attracts them.' In the end, frustration is what changes behavior."

McCarthy believes this reality will eventually produce positive results for these problematic drivers by forcing them to realize that driving is a privilege.

Data Shows Need

Demographics data, obtained from former traffic safety research and current Council studies, indicates today's negligent drivers share a number of age, gender, cultural and educational characteristics. Most are lower middle-class, skilled or semi-skilled, young men between the ages of 18 and 32, who are high school graduates.

According to the Council's publication *Accident Facts,* 1989 edition, more than 24,000 highway deaths occurred in 1988, not as a result of hazardous road or weather conditions or because of vehicle malfunction, but because of "improper driving behavior."

DDC-ADD Student Comments

"It made me realize that my old habits needed to come to an end."

"I feel like I truly learned how to control my driving behavior, and I now feel like I will think about it before I speed again."

"I reached a better understanding of how to *think* when I'm driving."

"I think the instructors were professional and yet expressed a degree of empathy for the students."

"The course teaches one of the most difficult tasks in life—thinking differently, which is what we humans like least."

"I thought it would be boring, but it wasn't! You learn more than just driving."

"The course focused on the real issue with proper driving—it's all in the mind."

"I received something more since it woke me up to my driving alternatives to become a safer driver for all concerned."

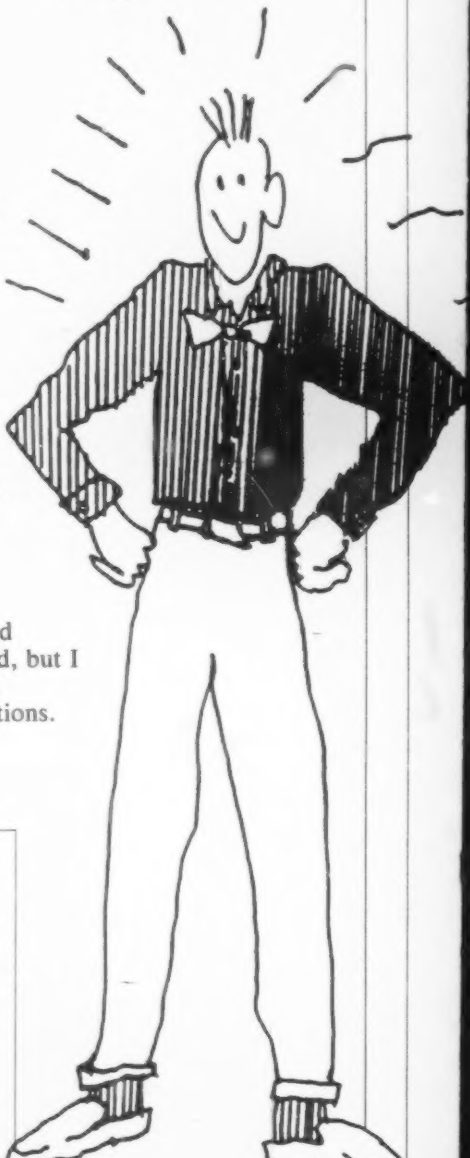
"I learned a great deal and enjoyed myself at the same time."

"I learned a lot about reality that could and SHOULD be applied to life as well as driving.

"They weren't there to slap your hands and tell you that you were a bad person. They informed you."

"I think the group activities have a positive result because it makes us feel like we have some sense of power, belonging and also freedom."

"...I haven't applied everything I've learned, but I have realized that I'm responsible for my actions. That's something!"



A 1989 driving needs assessment survey conducted by the National Safety Council confirms that these alarming statistics have not gone unnoticed by traffic and safety professionals. The survey, sent to traffic court judges, driving instructors, safety professionals and Council members, reports finding that modification of behavior behind the wheel is additionally necessary to reduce the number of highway fatalities.

The survey indicates that, while 13 percent of the respondents rank "improvement of driving skills and traffic law knowledge" as very important, an overwhelming 67 percent attribute the overriding cause of highway fatalities to "poor driving skills and traffic law knowledge."

The "Reality" of Driving

To help curb this disturbing trend, the Council recently embarked on an ambitious and innovative defensive driving course project designed to address irresponsible behavior.

What Is Reality Therapy?

Dr. Robert Wubbolding says in his book *Understanding Reality Therapy:*

Reality therapy is a method of helping people take better control of their lives. It helps people to identify and clarify what they want and need, and then evaluate whether they can realistically attain what they want. It helps them to examine their own behaviors and then evaluate them with clear criteria. This is followed by positive planning designed to help them control their own lives as well as fulfill their realistic wants and needs. The result is added strength, more self-confidence, better human relations, and a personal plan for a more effective life. It thus provides people with a self-help tool to use daily in coping with adversity, growing personally, and getting more effective control of their lives.

Reality Therapy is based on several principles:

1. People are responsible for their own behavior—not society, not heredity, not past history.
2. People can change and lead more effective lives.
3. People behave for a purpose—to mold their environment as a sculptor molds clay, to match their own inner picture of what they want.

The intended results as described above are achievable through *continuous effort* and *hard work.*

DDC-ADD's format is based on behavior modification principles developed by California psychiatrist Dr. William Glasser.

Glasser, founder of control theory and reality therapy, is most noted for his books, *Reality Therapy, Schools Without Failure* and *Positive Addiction, The Identity Society.*

DDC-ADD draws heavily on Glasser's theories which stress the importance of choice and personal responsibility in meeting the day-to-day challenges of life as well as personal and professional goals.

Audrey Gramstad, administrator of Curriculum for Driver Improvement Programs, National Safety Council, believes the reality-based DDC-ADD offers a no-nonsense approach to the defensive driving training.

"The most important question in reality therapy is, 'What is it you want?' This can be answered by program participants in two ways. The obvious answer is to keep a driver's license. That is the reason the traffic judge or corporate safety officer referred them to this program. The second answer will be different for each since the question assesses individual needs and wants," she says.

Curbs Irresponsible Driving

Using past and present demographic data along with "reality" behavioral modification techniques, DDC-ADD seeks to curb the irresponsible, often dangerous habits of the repeat offender.

Designed for the problem driver who has received too many traffic tickets or had too many accidents, DDC-ADD uses group participation to alter the behavior of drivers who know the laws but choose not to follow them.

The eight-hour DDC-ADD course is divided into four units of instruction. It can be presented in one day or in eight one-hour or four two-hour sessions.

Units I and II introduce course curriculum with personal anecedotes relating to individual citations, a quiz on the rules of the road and a discussion on the five basic needs and importance of a driver's license.

Units III and IV address the issue of needs versus wants through role playing exercises and present a portrait of the problem driver in a screened video, "It's Your Choice." Exercises include solutions to hypothetical situations such as speeding.

Through brainstorming activities, students determine for themselves whether tactics such as driving faster, leaving home earlier or choosing to not drive at all are appropriate or inappropriate responses.

At the suggestion of traffic court judges and traffic safety experts, state and local licensing systems are briefly outlined. Suspension, revocation and the point system are used as examples of the consequences of continued driving infractions.

DDC-ADD concludes its program by evaluating behaviors and selecting the traits most effective in meeting the challenge of safe driving. During the closing segment, participants discuss ways to achieve their safe-driving goals as well as to confront the "realities" of not following through on their personal plans.

Using the "Expectations" exercise from the first segment, students compare what they thought they would get from the class with their perceived results. This serves as a formal course evaluation, as well as personal evaluations.

While most participants appreciate the down-to-earth, basic approach taken by this novel defensive driving course, some who expect to coast through the course are thrown a curve.

"It's a shock to the students because the course doesn't deal with the rules of the road, McCarthy stresses. "The point is made very clear that it's up to you (the participant) to make choices for yourself. Many students find this incredulous."

"In the end, the participants have to ask themselves, 'Do I want to keep my license?' We feel this program will result in positive and realistic answers to these questions," he says.

Smooth Ride for DDC-ADD

Although DDC-ADD is only in its first year, response to the course has been overwhelming. The Council's approach to the problem driver has received positive feedback from course participants and instructors alike.

"From the evaluations we've received, the program has been well-received," Gramstad remarks. "The participation is such that even though an individual may be functionally illiterate, he or she is still able to participate."

One participant confessed in a course evaluation, "Even though I didn't expect to get anything out of this class, I really learned a lot of things. It really made me realize that my old (driving) habits have to come to an end."

In addition, Glasser, founder of the control/reality movement and inspiration for DDC-ADD, is pleased with the course's format. In a letter to the Driver Improvement department, he remarks, ". . .I was astounded by the competence of the program. I think this is a program that could be used in more places than just driver education."

DDC-ADD has become a welcome addition to the other well-known, highly successful Driver Improvement Programs.

"We feel very strongly about DDC-ADD," says McCarthy. For years, defensive driving professionals have known that, if we cannot involve individuals, then we will never truly solve the (collision) problem or save lives. This program addresses that problem."

"I think this is a program that could be used in more places than just driver education."

DDC-ADD Training Agencies and Course Schedule

The following training agencies are among those who have been approved to teach DDC-ADD: North Florida Safety Council, Tallahassee and Northeast Florida Safety Council, Jacksonville; Northwestern University Traffic Safety School, Evanston, Ill.; Maine Department of Public Safety, Augusta; Safety Council of the Ozarks, Springfield, Mo; Safety and Health Council of North Carolina, Charlotte; Nashville Area Safety Council, Nashville/Driver Improvement Council of Franklin, Tenn.; and Drive Safe, Washington, D.C.

The 1991 DDC-ADD tentative class schedule includes:

Foster City, Calif.	March 13-15 May 8-10
Charlotte, N.C.	March 19-21
Syracuse, N.Y.	March 24-26
Clearwater, Fla.	April 24-26
Kansas City, Mo.	May 22-24 June 12-14
Austin, Tex.	June 25-27
Chicago, Ill.	August 14-16
Houston, Tex.	September 16-18
Austin, Tex.	October 15-17

For further information on DDC-ADD curriculum, schedules and locations, contact:

Driver Improvement Programs
National Safety Council
444 North Michigan Avenue
Chicago, IL 60611
(312) 527-4800

As founder of the "Earn-It" program which encourages offenders to work and pay damages to their victims, Judge Albert L. Kramer (right) appeared on *60 Minutes* with Dan Rather.

Judge Calls the Last Shot

DWIs are sentenced to treatment in Quincy, Massachusetts.

By Judge Albert L. Kramer

In Massachusetts one of every five defendants who appears in our misdemeanor courts is arraigned for drunk driving, and these offenses constitute 50 percent of all the criminal cases that actually go to trial. It is time to focus not on our efforts but on our results.

From a criminal justice point of view, we must face the reality that we in the courts are failing to alter the destructive behavior of the hundreds of thousands of drunk drivers who come before us each year. That is a costly failure when we consider the enormous effort it takes to apprehend and convict even one drunk driver.

Worse still we must face the grim prospect that these offenders will continue their flagrant misconduct, driving drunk hundreds upon hundreds of times before we get a chance to catch them again. It is critical that we take a hard look at what we are doing, or more appropriately, what we are not doing, and make the needed changes without delay.

First let's take a look at the central reason for our failure. Simply put, we are administering the wrong sentencing and employing the wrong treatment in our courts. The sentencing practices that we now employ are founded on a host of misconceptions—misconceptions as to who the vast majority of drunk drivers are and what it really takes to change their endangering conduct.

In spite of clear evidence to the contrary, we keep holding to the belief that the typical drunk driver we see in court is an overindulging social drinker who merely has to be educated to the harms of excessive drinking while driving. It is based on this myth that we have fashioned our entire treatment strategy for dealing with "first offenders"—the group that constitutes over 70 percent of all those actually apprehended—and that has been a serious mistake.

We assume that the "first offender" is not an alcoholic, that he is generally law-abiding, that he can be reasoned with on a rational basis and more importantly, that he can be taught to moderate his drinking to acceptable levels. Our whole initiative is based on these underlying assumptions, but all empirical evidence suggests that these assumptions are completely fallacious.

The typical drunk driver is not a social drinker who merely needs to be educated.

Isolated Incidents?

First, let us see whether the "first offender's" drunk-driving violation is an isolated incident in the life of an otherwise respectable, law-abiding citizen. A Massachusetts probation study (which is typical) shows that most drunk drivers are just as destructive off the roads as they are on them.

Sixty-seven percent of all such offenders (44.8 percent of all first offenders) were found to have prior criminal records involving offenses such as disorderly conduct, larceny, assault and battery, etc. (mostly alcohol related). In fact, drunk-driving offenders are heavily involved in crimes across the board. Fifty percent of all violent crimes, 65 percent of all homicides and 50 to 60 percent of all child abuse cases are committed by offenders who are alcoholics—and a fair number of these have a drunk-driving conviction on their records.

What these facts clearly suggest is that drunk drivers are not mere social drinkers who happen to overindulge—they are largely alcoholics, seriously addicted and represent threats to the public safety. Their alcoholism is usually noticed first at home as a major cause of dysfunction to the family, then at work and later (as it spills over) by the public at large.

We see many of them in their first court appearances for domestic abuse, drunk driving, disorderly conduct, etc., but usually *only after* a history of destructive behavior outside of court. Consequently, if we are to initiate effective approaches to combat drunk driving, it is vital that we recognize the characteristics of those whom we bring before the courts and then put an end to some of the underlying misconceptions upon which we base our current court policies.

The most salient of these misconceptions is that the "first-offender" population consists of social drinkers who just had "a little too much to drink"—what can be termed the "There but for the grace of God, go I" myth. Our sentencing has been based on this myth and as a result has seriously retarded our efforts.

One might ask, however, "Isn't it true that there are are many of us social drinkers, who are *not* alcoholics, who end up occasionally driving drunk?" To be sure, a good number of us do overindulge and on occasion drive drunk—but the critical fact is that we don't often get arrested. Research shows that there is an extremely low probability of being arrested while driving drunk on the road.

A National Highway Traffic Safety Administration study shows that statistically, a driver would have to commit somewhere between 200 and 2,000 drunk-driving violations to be picked up *just once*. The odds are very great that the vast majority of those being *arrested* drive drunk on the road some four to five times a week for several years before being caught. Arresting a social drinker happens—but not very often.

Repeat offenders must be compelled to abstain from drinking at all.

Our experience at the Quincy District Court documents that conclusion. We engaged three of the leading alcohol treatment agencies in New England to conduct two-day clinical evaluations for all first offenders convicted of drunk driving. These assessments showed that out of 1,252 first offenders, 1,031 or 82 percent of them were alcoholics or problem drinkers and only 221 or 18 percent were social drinkers.

Inappropriate Approach

Clearly, conventionally used driver-alcohol education—basically geared to teach social drinkers how to limit their drinking—is totally inappropriate for such a population, even if they are called "first offenders." This population by and large consists of alcoholics for whom any amount of drink is lethal. It is clear, therefore, that we must employ sentencing strategies that compel them *to abstain from drinking altogether.*

Quincy Court began to do just that. The model for the first-offender program was fashioned after an on-going experimental treatment program for repeat offenders. With repeat offenders it was clear that we were dealing with alcoholics, and so a sentencing and treatment strategy was designed to compel sobriety.

We were warned that achieving such a goal would be difficult since most offenders would deny their addiction. We therefore devised a tough sentencing policy to be buttressed by a tight probation supervision. As a condition of that probation (after release from a 14-day, state-run inpatient program), the offender is required to enter a 30-week program consisting of five evenings a week of monitored alcohol-counseling and Alcoholics Anonymous (A.A.) meetings.

We encouraged the establishment of a private treatment program called the Eastern Massachusetts Alcohol Program (EMAAP) to assist us in this effort. The offender was required to pay a fee of $400 to EMAAP for a weekly alcohol counseling session and for the monitoring of his or her attendance at four other weekly A.A. meetings. Missing two meetings resulted in the offender being terminated from the program and returned to court.

Back to Jail

The approach is a form of coerced, intensive and monitored treatment. If offenders fail to comply, they are immediately surrendered to the court and given a series of weekend sentences. After the first weekend is served, they are assured that if they attend their A.A. meetings, the court will stay the execution of the remaining sentence.

However, if they fail again, they will be required to serve the remaining weekends. This approach has been most effective in compelling compliance with treatment obligations.

The sentencing strategy was based on two simple premises: (1) If you could get a problem drinker into a daily program like A.A. for at least six months, there would be a good chance of recovery; and (2) The way to get him or her there was through pressure and coercion.

The reason for the coercion is that alcoholics frequently deny their addiction. Denial is a defense mechanism that permits the alcoholic to continue drinking. Compulsion replaces reason. Therefore, the alcoholic is rarely motivated to seek or stay in treatment, especially if it's lengthy. He or she will do so only under extreme pressure—a spouse threatening divorce, an employer threatening a job loss or a judge threatening jail—and each prepared to carry it through. Thus, the strategy is to apply external pressure to force offenders to attend enough A.A. meet~~ings so that~~ they will recognize their problem and will want to stay with the program.

If the offender fails to comply with the terms of the program (i.e., misses any combination of two A.A. or counseling meetings), he or she is immediately brought before the court and "tourniquet" sentences (short at first but gradually increasing) are utilized to force compliance. A weekend or two, however, is usually sufficient.

The court reasoned that the threat of jail or a shock sentence (when necessary) would compel a fair number of offenders to comply with the very demanding program of attending 150 A.A. or counseling meetings within seven months with the further requirement of total abstinence. *Jail was to be the motivator; A.A. and counseling the means of recovery.*

Of course, the program does not work for everyone. The original fallout rate was high, we estimated about 20 percent. But getting 80 percent of alcoholics through the 30-week program, a large number with sobriety, was a fairly good result. I mention sobriety, for our goal is not to achieve controlled drinking. We require the offender to abstain from drinking. Every reliable study indicated that abstinence is the only treatment goal for alcoholics.

Alcoholics go to A. A. or to jail.

First Offenders

Since our evaluation revealed that 82 percent of all our first offenders were alcoholics or high-risk drinkers, we expanded our repeat offender approach (with modifications) to first offenders, classified into one of two categories: *social drinker* or *high-risk drinker* (alcoholic or problem drinker). As a result of the initial assessments, 74 percent were placed in the high-risk group. As testing became more sophisticated, that figure has risen to 82 percent. Only 18 percent are assessed as social drinkers.

Those assessed as social drinkers are assigned to a conventional educational program. However, the *high-risk drinkers* are required to attend a 30-week program of one counseling session and three monitored A.A. meetings per week. We encourage these offenders to seek agreement from a family member or significant other to be involved in a specially designed program for families. If that family member agrees to attend an Al-Anon meeting, as well as the one weekly counseling session, the program length is reduced to 20 weeks. The reduction in length is not just an incentive for such involvement; we also recognize that when a family member is involved, there is a much greater chance for success in a shorter period of time.

The program model conducted by Valle Associates has been revised by employing more sophisticated evaluations and treatment approaches, as well as methods for effectively monitoring A.A. attendance without transgressing on A.A.'s tenets of anonymity and independence.

Without reaching for anecdotal stories, let me supply some hard evidence for our optimism. Our dropout rate has fallen below 10 percent, and we appear to be changing the drinking behavior of those assigned to the program.

An independent evaluation shows a three times greater abstinence rate and a six times greater rate for A.A. attendance by the Quincy program participants compared to the conventional alcohol education approach.

New Principles

Our experience clearly dictates that a new sentencing approach between the courts and treatment community must be developed. In attempting to do so, it is vital that we understand some of the guiding principles that have emerged to date.

First, we must recognize *as a fact* that in dealing with so-called "first offenders," we are not dealing with a group of innocuous, well-behaved social drinkers who happen to overdo it on one occasion. We are dealing mainly with alcoholics and high-risk drinkers who drive drunk often and who get into very serious trouble.

While many are from the middle class and maintain employment (with difficulty, if we care or dare to notice), nevertheless they are like all other offenders when it comes to their drinking and their destructive behavior. They must be carefully evaluated and in most cases compelled to enter into intensive and tightly monitored treatment for a significant duration.

Second, we must initially incapacitate the more serious offenders in jails or in inpatient treatment facilities if they fail or refuse to respond to treatment in the community. Both public safety and the hope for rehabilitation demand this. For those who commit multiple offenses, we must maintain the incapacitation even when they are released from confinement. This can be achieved by creating what I term a "community cell," a means of tightly controlling the behavior of alcoholic parolees or probationers in the community until they can prove they can sustain sobriety and no longer threaten the public safety.

The "community cell" (or intensive probation) would restrict the offenders' opportunity to drink at night or on weekends by placing them under home confinement, i.e., they are restricted to their houses at night by means of a monitored curfew. This would be maintained until such time as the offender has gotten significantly involved in an A.A. program. If the offender is not working, we have often required the performance of community service at detoxification centers to occupy his or her days, as well.

Random chemical testing is also employed as a further condition of probation to insure that the defendant is drug and alcohol free. Since this is a particularly tough program, it should generally be imposed in consideration of a reduced or stayed jail sentence.

Third, it is essential that mandatory aftercare treatment and A.A. be made as a condition of probation *in every* drunk-driving case after an offender is released from an inpatient treatment facility or jail. Ultimately it is the treatment (a day at a time) and not the confinement that will lead to recovery. It is rare that a jail or prison experience will by itself change an alcoholic's behavior in the long run.

Non-compliance

Finally, we should strongly encourage judges and probation officers to develop policies that tightly monitor drunk-driver offenders on probation. Offenders should be surrendered back to court the instant there is a detection of noncompliance with court-ordered treatment.

In many cases, well-meaning alcohol professionals permit themselves to be manipulated by their clients. They articulate rationalizations for their clients' failures to comply with treatment requirements and excuse them under the assertion that their clients are victims of a disease. They are doing neither the alcoholic nor the public any favors. Noncompliance has a high correlation with recidivism, so all violations of probation should be reported to the court promptly or else we will be inviting further difficulty for both the offender and the next victim.

These strategies and treatment approaches will not come easily. When it comes to alcoholism and drunk driving, judges and probation officers are sincere, but too many are lenient through misguided compassion or perhaps misunderstanding. We are a drinking society, and often it is difficult to distinguish the alcoholic from an overindulging social drinker.

How many times have I heard a lawyer argue in behalf of an offender that "he is not an alcoholic, he holds an important corporate job," or in fact, "he has two jobs"—as if an executive whose nightly ritual of having five or six drinks at a respectable club makes him any less an alcoholic or any less dangerous on the road than the worker who downs six beers at the corner tavern.

How many times have I heard, "the defendant had too much to drink because he was going through a tough divorce," when the odds are, of course, that "he's going through a tough divorce because he had too much to drink." We are all too ready to accept every story, every excuse, except the truth—that in nearly every case drunkenness is the problem, not merely the symptom.

Treatment, not confinement, leads to recovery.

We must remember that 11 percent of the population consumes 50 percent of *all* the alcohol sold. That means that 16 million adults consume over 10 drinks a day, every day of the week, 52 weeks a year. They are a large part of the group that we see in the courts involved in drunk-driving cases and in the commission of other crimes. However, the underlying addiction to alcohol does not always surface without some probing.

New Awareness

Reforms will not come easily. They will not come easily because it will require us to reach a new plateau in our awareness—recognition that when we deal with the majority of crimes, we are indeed dealing with alcoholism. It is a fact difficult to accept, for if we do, it will require of us a willingness and a toughness to force lengthy, intensive treatment on a large number of individuals whose very disease compels them to deny their own addiction.

There is still a great deal of education needed to define for us what alcoholism really is and what it takes to help an alcoholic achieve sobriety. We are all conditioned to be what alcohol treatment clinicians call "enablers," willing to turn the other way and be manipulated by the alcoholic out of an inability to recognize the problem or an unwillingness to confront it. We thereby permit the alcoholic to continue to inflict injuries, pain and sometimes even death on innocent victims, as well as on him or herself.

No, reforms may not come easily, but they will surely come, for the public has been awakened to the destruction and human tragedy that have visited so many victims and their families. It is clear that the public will no longer accept old clichés as excuses for action. It is concerned and will demand a legitimate search for effective and innovative approaches. It is in that spirit that the judges and probation department of Quincy Court have undertaken to bring about reforms in this most vital area.

Judge Albert L. Kramer is presiding justice, Quincy Division, Trial Court of Massachusetts. He is nationally known as a lecturer and award winner for his leadership in alternative sentencing.

He founded the National Institute for Sentencing Alternatives, which has trained more than 5,000 judges and criminal justice professionals. He serves on the board of directors of the National Council on Alcoholism and Drug Addiction and the advisory board of the Domestic Violence Abuse Project, National Council of Juvenile and Family Court Judges.

Abridged from *Drunk Driving in America: Strategies and Approaches to Treatment,* edited by Stephen K. Valle, copyright 1986, with permission of The Haworth Press, Inc., 12 W. 32nd St., New York, NY 10001.

1 FEDERAL SAVINGS
JOHNS THOMAS

Hazmat on the Highway

By Sherree Geyer

Each day, thousands of hazardous materials (hazmat) shipments make their way across the United States. Often originating from Southwestern oil refineries, petroleum derivatives are shipped to manufacturing sites throughout the Midwest and Northeast.

Acids, toxins and other dangerous chemicals are on the move too. While some hazmat is shuttled by rail, most — estimated at a billion tons annually — traverses the country via public highways.

Unfortunately, the high quantity of hauled hazmat has produced an equally high number of spills or incidents. The U.S. Department of Transportation (DOT) has reported a greater than fourfold increase in highway hazmat incidents over the past 10 years.

While these statistics seem ominous, public and private experts are quick to say the figures could be misleading. Whether these numbers denote an actual rise in the number of chemical releases or whether they merely reflect better data collecting techniques is a question currently under debate among federal and state legislators, industry officials and consumer activists.

Handling Hazmat

By law, all shippers and carriers are required to haul hazmat in vehicles appropriate for the task, with warning placards identifying their dangerous cargo. Additionally, the contents must be labeled with a description of their chemical makeup. Recently passed legislation also calls for all chemical shippers to provide truck operators with hazmat shipping papers and emergency response phone numbers.

While lack of appropriate vehicle identification has not been linked directly to highway hazmat accidents, Larry Wort, chief of the Bureau of Safety Programs for Illinois DOT, says noncompliance with placarding regulations can aggravate the handling of a spill.

"Placard violations, in and of themselves, are not dangerous, but they could hamper the rescue efforts or the response action taken if there is an accident," he says. "Let's say a truck doesn't have a placard on it. When the first responders get there, they don't know what they're dealing with. Some hazardous materials become more dangerous when they're wet. So you don't want to start spraying water on them."

Wort suspects as many as 25 percent of all hazmat haulers violate DOT placarding regulations either on purpose or, more likely, by mistake.

"Lack of placards is a fairly common violation. The regulations are fairly voluminous and complex, and unless a shipper or carrier is in the normal business of transporting hazardous materials and has undergone specific training regarding these regulations, it's pretty easy to be in violation of one or the other," he explains.

First Response

Chemical accidents on the road often take a high toll on private property, the environment and the health and safety of fleet operators and first responders. A 1989 Transportation Research Board study states that while highway spills comprise only 11 percent of all hazmat incidents, they account for 35 to 68 percent of the most severe. The report also explains that road accidents are responsible for 90 percent of deaths and 25 percent of injuries related to hazmat releases.

While the environmental implications of hazmat incidents are uncertain, several variables including size and location and the type of chemical released are thought to determine the extent of its geographical damage. However, chemical accidents have not been studied thoroughly enough for experts to determine their short or long-term environmental consequences.

Recognizing what's spilled and knowing something about the substance are key factors in handling any hazmat accident, says Edgar Berkey, president of the Center for Hazardous Materials Research (CHMR). A not-for-profit subsidiary of the University of Pittsburgh, CHMR uses realistic, full-scale truck and rail-accident simulations to train police, firefighters and other emergency personnel in proper hazmat spill procedures.

Although CHMR enjoys the respect and recognition of its private and public program graduates, Berkey maintains that most first responders have not received the proper training to deal with the magnitude of a roadway hazmat spill.

"Put yourself in the worst situation possible," he suggests. "The snow has fallen, and there are two overturned vehicles on the road. Now go through the thought processes you would normally experience during an accident. You have to assess whether people are injured, what the damage is both personally and environmentally. We train people to respond safely to these events."

While federal DOT regulations don't force chemical shippers and carriers to employ first-response teams, some companies are providing emergency training to their employees to avoid potentially catastrophic hazmat incidents. At E.I. DuPont de Nemours and Company, TERP (Transportation Emergency Response Procedure) teams are dispatched to accident sites to aid in emergency relief efforts. None of this is required. Some companies do it. Some just claim to do it," Harvison says.

In addition, like many chemical manufacturers, DuPont subscribes to CHEMTREC (the Chemical Transportation Emergency Center). An emergency response telephone service established by the Chemical Manufacturer's Association (CMA) in 1970, CHEMTREC is one of the most frequently used chemical hotlines. It provides quick data analysis and assistance to its members.

Rising Tide of Reports

The *Chicago-Sun Times* recently published that reported highway hazmat spills in Illinois jumped by more than 84 percent during 1988. Illinois hazmat accidents were tabulated by chemical category, including 398 gasoline, 272 combustible liquids, 131 crude oil, 86 polychlorinated biphenyls (PCBs), 42 sulfuric acid, 39 anhydrous ammonia and 33 hydrochloric acid. Fortunately, no one died as a direct result of a spill.

Whether a drop of gasoline escapes from a leaky valve or thousands of gallons of crude oil spew from an overturned tank truck, all chemical releases now are required to be reported to DOT. Because hazmat incident reporting was mandated only last year, many experts, like Cliff Harvison, president of National Tank Truck Carriers, Inc. (NTTC), Alexandria, Va., question how the data should be interpreted.

"We do know that the number of reports has increased," he says. "We don't know if the reports are representative of the number of spills occurring or merely of better reporting techniques. In fact, there's evidence that spills are down because loads are down. There still may be under-reporting, but how much is uncertain."

Paul Kaplow, vice president, health, safety and environment for the Pittsburgh-based plastics manufacturer, Aristech Chemical Corp., concurs. He believes further study of the hazmat data is necessary.

"These days, even if you spill one pound of substance, you need to file a report on it," he explains. "So the data collection procedure is much better. If you want to be fair, you'd have to look at those numbers over time and investigate whether the reporting systems have changed."

Not everyone agrees that better reporting techniques have grossly

"Transportation and shipping companies must aggressively educate their personnel about what it is they're carrying."

Hazardous Materials Transportation Seminars

Hazardous materials transportation is closely regulated—by the U.S. Department of Transportation (DOT) and by the International Civil Aviation Organization (ICAO).

Both organizations REQUIRE all persons handling, documenting or transporting hazardous materials to receive initial and recurrent annual training.

The National Safety Council offers a two-day seminar to help professionals meet these training requirements. The seminar is designed to help people by transforming complex regulations into easy-to-understand information.

New and experienced employees will benefit from the material presented, including the latest regulatory trends and information. Best of all, the company benefits—legally, economically, and from safer transportation and handling of hazardous materials.

Who Should Attend?

a shipper: Every manager, supervisor and employee involved in shipping should attend, including those with the following job functions: identifying, documenting, handling, packaging, marking, labeling, receiving and shipping hazardous materials.

a transporter: All managerial, supervisory and other employees involved in hazardous materials transportation should attend, including: package and cargo handlers, drivers, pilots and customer service personnel.

The Program Curriculum

8:30 AM-4:30 PM Both Days

Title 49, Code of Federal Regulations (CFR)

- Regulatory Agency Review
- Purpose and Use of Hazardous Materials Tables
- Identifying and Classifying Hazardous Materials
- Packaging Requirements
- Marking and Labeling
- Shippers Certification and Other Documentation
- Vehicle and Container Placarding
- Enforcement Procedures and Penalties

International Civil Aviation Organization (ICAO) International Air Transport Association (IATA)

- Introduction of IATA and ICAO Regulations, With Comparative Analysis of Title 49 CFR
- The "Dangerous Goods" List and Its Use
- Packaging Requirements
- Marking and Labeling
- The Dangerous Goods Declaration Form and Bill
- The U.S. Government (USG) Variations and Their Impact

Dates, Locations and Co-sponsors

March 6-7, 1991
Baltimore, MD
Safety Council of Maryland Headquarters
Rutherford Business Center
17 Governor's Court
Baltimore, MD 21207
Safety Council of Maryland
(301) 298-4770

March 20-21, 1991
Philadelphia, PA
Sheraton Inn Northeast
9461 Roosevelt Boulevard
Philadelphia, PA 19114
Metropolitan Philadelphia Safety and Health Council
(215) 332-3400

April 3-4, 1991
Birmingham, AL
Commerce Center-Eighth Floor
2027 First Avenue, North
Birmingham, Al 35203
North Alabama Chapter, National Safety Council
(205) 328-7233

April 17-18, 1991
Chicago, IL
National Safety Council Headquarters
444 N. Michigan Avenue
Chicago, Il 60611
(312) 527-4800, ext. 8407

May 8-9, 1991
San Francisco, CA
Embassy Suites Hotel
250 Gateway Boulevard
South San Francisco, CA 94080
Western Region Office, National Safety Council
(415) 341-7258

Specialized Training—With Customized On-Site Programs

Hazardous materials training programs can also be customized to a company's specific needs. These programs can be tailored to particular shipping requirements—small or large.

The Council's experts are available around-the-clock to accommodate training for all employees, including: the secretary who types the certification; the personnel responsible for packaging, marking and labeling boxes; those who load and unload containers and vehicles; those who transport the materials.

For information on seminars or on-site programs, call or write:
National Safety Council
444 N. Michigan Ave., Chicago, IL 60611
Toll-Free Number: (800) 621-7619, (outside Illinois)
(312) 527-4800 (Illinois)
8:30 a.m.-4:45 p.m., CDT, Weekdays.
Ask for: Tim Kennedy, ext. 8407.

exaggerated the rate of hazmat incidents. John Cameron, associate director of the Chicago-based public watchdog group, Illinois Public Acton (IPA), takes issue with this simple explanation. He attributes increased spills instead to greater reliance on chemicals by industry and looser federal transportation regulations. IPA has been lobbying for passage of tougher federal and state hazmat regulations and penalties since 1987.

"There are two sets of issues involved in hazmat incidents: hazmat safety and hazmat transportation. What we've seen in the rail industry is that, as federal enforcement has eased in the last 10 years, there have been more accidents. Correspondingly, there has been an increased reliance, on the part of industry, on hazardous materials. So you've got more stuff being shipped with less oversight. When there was a recession in '82, there was a big drop in spills. As soon as industry recovered, we saw a steady climb in those accidents," says Cameron.

In addition, while many believe mandated accident reporting has substantially improved hazmat record keeping, Cameron maintains that the DOT's inaccurate bookkeeping and data duplication obscure the true scope of chemical spills.

"The data available are so poorly tabulated that it's hard to say what's really happening. There are vast discrepancies in the data bank. The Congressional Technology Assessment Office did an analysis a couple of years ago and said DOT's numbers were off by a factor of two to three times," Cameron says.

While traffic accidents produce the most devastating hazmat incidents, it is the loading and unloading process that results in the greatest number of spills. An NTTC report, based on DOT data compiled between January 1983 and June 1985, attributed 83 percent of all chemical releases to errors in loading and unloading procedures.

Proper education and training would reduce the number of hazmat shipping and hauling errors,

An emergency response team tends to a carrier spill at an industrial plant site.

Cameron says. "Transportation and shipping companies must aggressively educate their personnel about what it is they are carrying. Frankly, the real problem is that if one carrier takes more precautions, it will invariably cost more money. So while he may be reducing his ultimate liability, he will have to charge more to transport the same load than his competitors will. That's why it's really a question of public policy and not private initiative."

Carriers may be spending more to transport their hazmat shipments if a DOT docket (HM-183) is ratified. The docket, predicted to increase fleet maintenance costs by 30 percent in 1991, would simultaneously improve trucking safety records by driving smaller, less reputable carriers out of the hazmat hauling business. Small carriers, the product of truck deregulation, are the culprits responsible for lowering overall industry safety standards, says Harvison.

"We have the worst problems with the fly-by-nights (small carriers) who sink their life savings into a truck. The fact that they have no safety record or experience is immaterial. The only way for them to compete in the market is to cut their prices. This has a debilitating effect on the industry," Harvison says. "We saw the same thing with airline deregulation which decreased safety across the board."

Shippers Respond

Many experts in industry argue that hazmat safety should be largely up to the shippers. NTCC's Harvison, who believes chemical manufacturers should take greater interest in how their products are transported, says hazmat haulers would be out of business if it weren't for the shipper.

"We have to place more responsibility on the shippers of these products. The reason we have truckers on the road in the first place is that people give them business. We have to put pressure on shippers to check the credentials and safety records of truckers."

IPA's Cameron agrees and says states should adopt tougher legislation to control the interstate movement of hazmat.

"The federal policy on toxic and hazardous spills is to allow states to have jurisdiction. On the other hand, federal highway and transportation policy, in the interest of interstate commerce, requires uniform standards across all states. We argue that this is really a question of toxic and hazardous materials safety and not transportation policy," says Cameron.

The chemical industry is responding to the call for more hazmat shipping controls with the implementation of a set of industry standards called "Responsible Care." This self-imposed CMA standard will consist of 10 management principles designed to facilitate hazmat distribution and transportation procedures and to restore shaken public confidence in chemical manufacturers.

While Responsible Care is expected to provide higher standards for those in the chemical industry, some companies have hazmat policies in place. Dick Weiss, manager of hazardous materials for DuPont, Wilmington, Del., says his company has employed the RHYTHM (Remember How You Treat Hazardous Materials) system for 15 years with great success. RHYTHM coordinators provide corporate advice and guidance as well as interfacing with plant workers.

In addition, the company, which supplements its efforts with safety videos and manuals, routinely screens its hazmat carriers, Weiss says. "Our record is getting better every year."

"The chemical industry has taken its share of lumps for good reason," Aristech Chemical's Kaplow notes. "I think this is an earnest acknowledgement, on the part of chemical industry, that people are upset and that industry must display a visible way of responding. If you're going to exist as a business entity, then you must seek the concurrence of society that you have the right to do business."

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WASHINGTON WORLD

Fuel Economy Study

Addresses Safety and Clean Air

By Jim Castelli

Secretary of Transportation Samuel Skinner has announced that the National Academy of Sciences (NAS) will study the extent to which automotive fuel economy can be improved and still meet environmental and safety needs.

The study reflects the ongoing tension between the need to save energy by making vehicles more fuel efficient and the need to provide passenger safety by making vehicles heavy enough to survive accidents.

"Our goal is to provide the American people with cars and light trucks that offer the best feasible combination of safety, fuel efficiency and cleaner air," Skinner says.

He says the NAS' National Research Council will analyze both technological and economic issues. Its mandate is to look at fuel economy "from a fresh perspective, objectively, in-depth and consistent with provisions of the Clean Air Act of 1990."

Skinner says the study's first phase, scheduled to be completed by June 30, will:

- Provide estimates of fuel economy levels that are practical and feasible over the next decade
- Identify the technologies that could bring about those levels
- Identify barriers to the rapid introduction of those technologies into the marketplace.

The second phase will expand on the earlier findings and consider other appropriate means of fuel economy.

Jerry Curry, head of the National Highway Traffic Safety Administration (NHTSA), says, "Only half of the motor-vehicle fuel economy gains of the recent past have come from improved technology. The other half have come from stripping about a thousand pounds of weight from cars, known as downsizing, which has had adverse safety effects. Despite the fact that downsizing has led to an increase in small-car occupant fatalities, a variety of safety innovations in recent years has resulted in a decline in the number of highway deaths and the fatality rate."

A 1975 energy act established an automotive fuel economy regulatory program and set corporate average fuel economy (CAFE) standards. The law requires NHTSA to set the standard at the "maximum feasible average fuel economy level" after considering four factors:

- Technological feasibility
- Economic practicability
- The effect of other motor-vehicle standards on fuel economy
- The nation's need to conserve energy

The law set a standard of 18 miles per gallon for 1978 cars. The present standard is 27.5 mpg for passenger cars and 20.2 mpg for light trucks.

NHTSA held a public hearing on Dec. 13 on its proposed draft outline of an environmental impact statement on the effects of automotive fuel economy rules.

Traffic Safety Goals

A U.S. Department of Health and Human Services report lists traffic safety goals for the year 2000. The recommendations are part of a larger report, "Healthy People 2000: National Health Promotion and Disease Prevention Objectives."

Here are the recommendations:

1) Reduce deaths caused by motor-vehicle crashes to no more than 1.9 per 100 million vehicle miles traveled and 17 per 100,000 people. The baseline the report uses for comparison is 2.4 per 100 MVT and 19.1 per 100,000 people in 1987.

The report sets specific goals for some population groups:

- For children 14 and under, a rate of 5.5 per 100,000, down from 6.2
- For those aged 16-24, 33 per 100,000, down from 36.9
- For those 70 and older, 20 per 100,000 people, down from 22.6
- For American Indians and Alaskan natives, 40 per 100,000, down from 47.7
- For motorcyclists, 33 per 100 million MVT and 1.5 per 100,000 people, down from 40.9 and 1.7
- For pedestrians, 2.4 per 100,000, down from 2.8

2) Increase the use of occupant protection systems, such as safety belts, inflatable safety restraints and child safety seats, to at least 85 percent of motor-vehicle occupants. The baseline was 42 percent in 1988. The report calls for an increase in the use of such systems for children four and younger from 84 percent to 95 percent.

3) Increase the use of helmets to at least 80 percent of motorcyclists and at least 50 percent of bicyclists from a baseline of 60 percent of motorcyclists in 1988 and 8 percent of bicyclists in 1984.

4) Extend to 50 states laws requiring safety belt and motorcycle helmet use for all ages. The baseline is 33 states and the District of Columbia for seat belts and 22 states, the District and Puerto Rico for motorcycles in 1989.

5) Increase to at least 30 the number of states that have design standards for signs, signals, markings, lighting and other characteristics of the roadway environment to improve the visual stimuli and protect the safety of older drivers and pedestrians. The report says baseline data will be available in 1992.

EVENTS

MARCH

Motor Fleet Accident Investigation Workshop — March 4-5, Chicago — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611. (312) 527-4800, extension 8407.

Hazardous Materials Transportation Seminar — Mar. 6-7, Baltimore, Md. — Safety Council of Maryland, Rutherford Business Center, 17 Governor's Court, Baltimore, MD 21207. — Mar. 20-21, Philadelphia — Metropolitan Philadelphia Safety and Health Council. (215) 332-3400. (301) 298-4770.

Traffic Signal Operation in Coordinated Systems — March 18-22, Atlanta — Continuing Education, Georgia Institute of Technology, Atlanta, GA 30332-0385. (404) 894-2547.

Maintenance of Commercial Vehicles Phase A — March 19-21, Wilmington, Del. — National Committee, Motor Fleet Supervisor Training, A364 Engineering Bldg., Michigan State University, East Lansing, MI 48824-1226. (517) 353-1790.

Analysis and Evaluation of Traffic Safety Problems — March 25-26, Ukiah, Cal. — Institute of Transportation Studies Extension Programs, Richmond Field Station, University of California, 1301 So. 46th St., Bldg. 452, Richmond, CA 94804. (415) 231-9590.

APRIL

Maintenance of Commercial Vehicles Phase B — Apr. 2-4, State College, Pa. — National Committee, Motor Fleet Supervisor Training, A364 Engineering Bldg., Michigan State University, East Lansing, MI 48824-1226. (517) 353-1790.

Hazardous Materials Transportation Seminar — Apr. 3-4, Birmingham, Al. — North Alabama Chapter, National Safety Council, (205) 328-7233. Apr. 17-18, Chicago — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611. (312) 527-4800, extension 8407.

Petroleum Economics and Management — Apr. 8-12, Evanston, Ill. — The Transportation Center, Northwestern University, 1936 Sheridan Rd., Evanston, IL 60208-4040. (708) 491-3225.

Analysis and Evaluation of Traffic Safety Problems — Apr. 9-10, San Jose — Institute of Transportation Studies Extension Programs, Richmond Field Station, University of California, 1301 So. 46th St., Bldg. 452, Richmond, CA 94804. (415) 231-9590.

Maintenance of Commercial Vehicles Phase A — Apr. 9-11, East Lansing, Mich. — National Committee, Motor Fleet Supervisor Training, A364 Engineering Bldg., Michigan State University, East Lansing, MI 48824-1226. (517) 353-1790.

DDC-Professional Truck Driver — Apr. 15-17, Chicago — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611. (312) 527-4800, extension 8407.

DDC-Coaching the Mature Driver — Apr. 18-19, Chicago — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611. (312) 527-4800, extension 8407.

Maintenance Management Course — Apr. 30-May 2, State College, Pa. — National Committee, Motor Fleet Supervisor Training, A364 Engineering Bldg., Michigan State University, East Lansing, MI 48824-1226. (517) 353-1790.

MAY

DDC-8 — May 6-8, Chicago — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611. (312) 527-4800, extension 8407.

Principles of Fleet Administration Safety — May 6-8, Chicago — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611. (312) 527-4800, extension 8407.

Advanced Transportation Management — May 6-17, Evanston, Ill. — The Transportation Center, Northwestern University, 1936 Sheridan Rd., Evanston, IL 60208-4040. (708) 491-3225.

DDC-4 — May 9-10, Chicago — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611. (312) 527-4800, extension 8407.

Lifesavers/9, National Conference on Highway Safety Priorities — May 12-15, Charlotte, N.C. — Lifesavers Confernece, Inc., 919 18th St., N.W., Suite 1001, Washington, D.C. 20006. (202) 857-0002 or 1-800-388-2224.

Maintenance of Commercial Vehicles Phase A — May 22-24, Appleton, Wis. — National Committee, Motor Fleet Supervisor Training, A364 Engineering Bldg., Michigan State University, East Lansing, MI 48824-1226. (517) 353-1790.

JUNE

Motor Fleet Accident Investigation Workshop — June 3-4, Chicago — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611. (312) 527-4800, extension 8407.

Advanced Maintenance Management — June 11-13, State College, Penn. — National Committee, Motor Fleet Supervisor Training, A364 Engineering Bldg., Michigan State University, East Lansing, MI 48824-1226. (517) 353-1790.

Analysis and Evaluation of Traffic Safety Problems — June 13-14, San Diego — Institute of Transportation Studies Extension Programs, Richmond Field Station, University of California, 1301 So. 46th St., Bldg. 452, Richmond, CA 94804. (415) 231-9590.

Roadblocks: For or Against?

Traffic Safety readers who responded to our recent survey on the desirability of police roadblocks in stopping drunk drivers are almost equally divided on the issue.

From a readership of traffic-safety professionals, 53 percent support the police checkpoints while 47 percent oppose them. Many on both sides of the question feel strongly and attached statements explaining their positions in detail.

The controversy was provoked by a six-to-three decision of the U.S. Supreme Court last June. It overturns a Michigan state court ruling that DWI roadblocks violate the Fourth Amendment prohibition against unreasonable searches and seizures.

For: They scare drunk drivers off the road.

Sgt. David L. Wolf of the Waterford Township (Mich.) Police Department summarizes the position of many of the respondents who favor roadblocks.

He writes: "These measures should (not) be used on a daily or around-the-clock basis. The mere knowledge that such a program is in effect in a given area will cause many potential drunk drivers to consider, and hopefully employ, other means of getting around, such as a 'designated driver.' "

He criticizes a survey question on the possibility of catching more violators by other means. "This seems to reflect an old sentiment that kept police agencies from becoming proactive in their approach to given problems.

"If a program were able to dissuade all drivers from drinking and driving, thus eliminating the drunk-driving program altogether, would it still be a 'waste,' merely because there were fewer (or no) arrests? What needs to be examined in the checkpoint issue is the overall impact on driving safety — not just the number of arrests that can be generated."

Sgt. Wolf agrees that roadblocks must be employed responsibly. "Timing and location of checkpoints would need to be of utmost concern, in order to win and retain the support of the public. Setting up a checkpoint at rush hour and causing greater-than-normal congestion would surely undermine community support. In addition, such a move could easily create a hazard as great as the targeted problem.

No Surly Cops

"Staffing the checkpoint with polite and professional personnel is also critical to the program's success. The law-abiding driver who is stopped at a checkpoint would be loath to classify the experience as positive if he or she were confronted by a surly, unprofessional officer.

"Ultimately, the success or failure of a checkpoint program will hinge on three major issues:

"1. The need to inform the community that the program is in effect and that drivers should expect to encounter checkpoints at any time or place.

"2. Community support for the program must be present.

"3. Through professional planning and conduct, the police can maintain the confidence of the community in both the checkpoint program and in the department itself."

Lt. Richard S. Zenk, Pennsylvania State Police patrol section commander, gives an example of the results of a roadblock conducted jointly last Aug. 31 by state police of Pennsylvania, Delaware and Maryland.

It was aimed especially at a problem in southern Pennsylvania, where many drivers drink at bars in Maryland and Delaware, then drive into Pennsylvania on back roads, expecting to dodge police.

Roadblock Results

The haul included 24 drivers "under the influence," 39 speeders, 37 safety-belt violators and 47 other traffic offenders. Written warnings were issued to 57 drivers. There were two arrests for non-traffic crimes. The operation employed 80 officers, who put in 480 man hours.

The statistics, of course, can't be complete. "We will never know how many drunk drivers were kept off the roads by the fear of apprehension," Lt. Zenk writes. "I was present at the sobriety checkpoint in Pennsylvania and nearly every motorist who was stopped complimented the officers for their efforts. Even though the majority of these people were en route to seashore destinations for the Labor Day weekend their support was evident."

In Nevada, where the bars and casinos are open 24 hours a day, "roadblocks are an absolute must," comments Charles Edsall, a training supervisor for the U.S. Postal Service in Reno. "It makes me feel good to see a roadblock up . . . Drunk drivers don't give anyone a choice on whether they want to drive on the same streets with them."

An unsigned comment acknowledges the force of the fear factor: "I am a safety professional — and I drink beer — and I have driven with as many as three beers under my belt. But since I went through a few roadblocks I won't consider driving any more under any influence."

Other Comments

- Roadblocks "seem analogous to police checking speed limits. There is a fear of getting caught which causes people to obey the speed limit law. The fear factor works."
- "Checkpoints are but another tool to be used in the war against drunk drivers. We need to allow all the tools possible to win this war."

- "Do anything that is constitutional to get drunk drivers off the road. Enforce tougher punishments including mandatory jail terms and revocation of drivers' licenses."
- "Place roadblocks near businesses that offer alcohol, and stop the drivers before they get too far on the public highways."

Pro-roadblock respondents kept an eye on the need for public acceptance. "Roadblocks for the *sole purpose* of stopping DUIs will work," one wrote. "Multi-purpose roadblocks stop traffic too long."

Another says: "Public support is the key to the success of any program. With the proper attitude and the cooperation of society, these checkpoints can save lives and injuries and reduce expenses."

Against: Their main threat is to civil liberties

A few respondents oppose roadblocks on the grounds they don't go far enough. "Start monitoring patrons of alcohol-serving establishments as they leave the premises," suggests one.

Another writes: "Police should use the most effective and efficient means to catch drunk drivers. Thus, roadblocks need to be evaluated along with all other methods available."

But most opposition clusters around skepticism that roadblocks are truly effective and outrage at a perceived step towards a police state.

A staff member of the Michigan Department of Transportation sums up both views: "Roadblocks are inefficient and ineffective at deterring drunk and drugged drivers. They are a political image-building tool.

"The current Supreme Court decision is wrong, and will probably be overturned by a future court. It is unconscionable to try to educate drunk drivers into changing their behavior by subjecting their fellow citizens to police harassment."

Discrimination Possible

"I do not oppose efforts to curb drunk driving," writes another, "but such roadblocks constitute a violation of our rights and can be used in a discriminatory manner for selective prosecution or warrantless searches."

Robert T. Baer, former president of All Citizens Against Unjust and Severe Enforcements (A-CAUSE), writes: "Beyond the proven inefficacy of these blockades, more paramount is the clear violation of citizens' basic rights." He quotes Benjamin Franklin: "They that can give up essential liberty to obtain a little temporary safety deserve neither liberty nor safety."

Stephen G. Carrellas, New Jersey coordinator, National Motorists Association: "Drunk driving is a serious problem, but like all serious problems, solutions that ignore or destroy basic rights and individual freedoms only create greater problems. . .

"Whenever police resources are used for checkpoints, a clear choice is made not to deploy those resources on a roving patrol where police can attend to the full range of problems they may find on the road. This includes stranded or disabled motorists, accidents, reckless drivers and, of course, drivers exhibiting intoxicated behavior.

Roving Patrols Preferred

"Keeping police resources from the maximum effectiveness afforded by a roving patrol is not a positive step for improving overall highway safety. In fact, most police officers I speak to at safety forums prefer the roving patrol over a checkpoint. And for a good reason. It is well known that these checkpoints don't catch drunks."

Several respondents question roadblock proponents' assumption that they enjoy public support.

"Roadblocks are much more hype and publicity than effective law enforcement," says one. "It is time we work for effective programs to save lives rather than emotional responses such as roadblocks. The public supports roadblocks because they are misinformed about their effectiveness."

"Drunk drivers are a serious problem, but so is today's traffic," comments another. "Do you stop 300 cars to catch one DUI?"

From a Texan: "Many times a person's schedule is very restricted. Roadblocks will slow traffic, elevate tempers and irritate many who now already feel intrusion into their lives. I have heard many of our elder citizens reflect that we appear to be heading in the direction of a (national) police state."

A similar view from the East: "In large urban areas like New York and New Jersey roadblocks delay traffic for hours. Drivers get annoyed and tired, causing accidents and deaths from impatient drivers."

Traditional Red Colors Safety

Fire-fighters still use red, one of the least-visible vehicle colors.

By Mark Shuman

(Photo by Dr. Steven Solomon.)

Black and white film is not exactly equivalent to the human eye, but this photo of a lime-yellow fire truck demonstrates its high visibility under adverse conditions. A red truck would appear black.

Here's a do-it-yourself safety research project that doesn't require a grant. Ask anyone, "Quick—what's your favorite color?" Most likely the answer will be "red." Almost certainly, according to Owego, N.Y., optometrist and volunteer firefighter Dr. Stephen S. Solomon, it won't be "lime yellow." Solomon says many people simply like red.

The color of passion, comfort, warmth and security, red, of course, is also the traditional color of fire equipment. According to Solomon, for safety's sake, this is a tradition that must change.

For 20 years Solomon has been the spokesperson, guru and chief advocate of lime yellow as the safest color for firefighting equipment. And for 20 years he has been fighting the lovers of red.

"I'm an optometrist," says Solomon, "I learned that red is one of the hardest colors for the eye to see. I'm a firefighter, too, so I began to question a long time ago just why fire trucks are red."

Largely because of Solomon's prolific writings on the subject, the sun may be beginning to set on the era of red fire trucks. Before 1970, he says, about 85 percent of fire trucks in the United States were red. In 1990, 40 percent of the new equipment ordered by fire departments is arriving in fire stations with gleaming lime-yellow paint.

For its high visibility, Solomon believes lime yellow should be favored not just by safety-conscious fire and rescue teams, but also by truckers and even new-car buyers.

Researchers have published reports showing that the least visible automobile colors—and potentially the most dangerous—are black, dark blue, dark green and dark red.

The Right Wavelength

The reason for this is wavelengths. According to optometrists, human beings are simply more sensitive to some color wavelengths than to others. If objects are equally bright, the human eye is most sensitive to hues in the middle of the color spectrum, between the wavelengths of 510 and 570, says Dr. Arol Augsburger, professor of clinical optometry at Ohio State College of Optometry in Columbus. Lime yellow falls in the middle of the spectrum of visible light, the scale of colors—red, orange, yellow, green, blue, violet.

Not perfect for all road conditions, lime yellow is a compromise. At night, white is the most visible color because it provides high contrast. But lime yellow stands out better against cloudy skies and snowy backdrops during the day. Red, although somewhat visible during the day, appears black at night and in twilight, when lime yellow is still quite visible.

If fire departments are expected to be concerned with safety, why aren't they acquiring lime yellow fleets en masse?

"There are several reasons," says Solomon. "The most obvious is that there are lots of traditions in fire departments. I think some chiefs don't care about safety if they have to give up their red trucks."

Fire trucks have been red "since dirt was brown."

"Red has been the color of fire trucks since dirt was brown," an Ohio fire chief says in a recent issue of *Fire Chief Magazine.*

Data Supports Lime-Yellow

In psychological tests, lime yellow is never perceived as lovable. Often, it's considered downright "grating to the personality," Solomon says. "That has to do with its attention-getting." Aesthetics aside, Solomon has serious data to bolster the case of his pet color. In 1984, for example, he researched intersection accident rates in 750,000 fire runs from nine test cities. Compared to non-emergency vehicles, emergency vehicles experienced two and one-half times more accidents in intersections. Of the fire departments surveyed, four use lime-yellow equipment and five use red and white.

Solomon found that accident rates in the red group are double those in the lime-yellow sample. In the study, all of the vehicles were equipped with sirens and flashing lights. Other variables were also kept to a minimum. A subsequent test confirms Solomon's results.

"The fire service, although it preaches safety, has been rapidly denying our findings ever since the first study," says Solomon. He believes he knows several reasons why this is so. Many of the safety measures adopted by fire departments are designed to protect firefighters —not civilians.

"Four civilians are killed in collisions for every firefighter."

"The fire service has demanded enclosed cabs, bans on tailboard riding and safety belts, and for these advances, the firefighters may well be safer," he says.

"But what happens to the people that they have hit in collisions?" Solomon pauses a moment before answering his own question. "Four civilians are killed in collisions for every firefighter, and it is conceivable that we kill or injure more civilians on the road than we rescue from fires."

"Talking in a Vacuum"

Statistics notwithstanding, when he approaches fire chiefs with his color safety studies, Solomon says it is often as if he is "talking in a vacuum."

Robert E. Dunkel II does duty in two fire departments and is assistant chief of the Genoa Township Fire Department in Galena, Ohio. Dunkel is another promoter of lime yellow for safety's sake. Years ago, he remembers, his commander would not consider adopting lime-yellow trucks even after they were proved to be more visible.

"Fire trucks were supposed to be red and that was it," Dunkel says. Today, his main workplace is the fire department in neighboring Sharon Township, where equipment has been lime yellow for about ten years. In Genoa Township, specifications for new rescue trucks currently are being drawn up and the chief there is reviewing the color issue carefully.

After presenting a stack of information on color safety to the Cincinnati Insurance Co. two years ago, Dunkel was successful in obtaining a five percent reduction in insurance rates on lime-yellow vehicles in Sharon Township. Stephen Solomon has also obtained a rate reduction on his department's liability insurance.

The Insurance Services Office noted in 1989 that liability insurance rates could be discounted up to 25 percent for lime-yellow equipment in fire department policies. Insurance companies don't make such concessions out of kindness, says Solomon. "They know lime yellow will save them money."

The 32-year fire department veteran also cites a recent lawsuit that was settled out-of-court after a motorcyclist was struck and injured by a red fire truck. The suit settled "in six figures," Solomon says, in part because one of its charges was that the truck's red paint was not sufficiently visible. If similar lawsuits become commonplace, Solomon believes the courts will do much to further his cause.

Safety Packages

Neither Solomon nor Dunkel claims lime-yellow vehicles as a panacea for fire department safety concerns. Instead, says Solomon, color is an underrated part of "safety packages" that should also include sirens and flashing lights.

However, in an age of loud car stereos, sound-proofed vehicles and noisy air conditioners, sirens, which inherently emit a non-directional noise, have become less effective safety measures, he says. Even with the windows open, a driver finds pinpointing a siren's location difficult.

Quoting a study presented at an international conference by the National Illumination Committee of Britain, Solomon says that while several flashing lights are effective attention-getters, too many flashing lights actually decrease visibility. Less can often be more. Solomon questions the safety effectiveness of certain fire trucks, some of which have up to 27 flashing lights.

He argues that the use of strobe lights should be monitored more carefully since such lights have the effect of inducing seizures in epileptics and disorienting those without the disability.

Over the years, Solomon says he has faced many criticisms of lime-yellow paint as a safety measure. His research into variables like sirens and strobe lights have stemmed from these criticisms.

If lime yellow is acceptable to less than half of the firefighting ranks, as Dunkel estimates, other safety-conscious organizations have been quicker to embrace the concept. The American Optometric Association adopted a formal resolution supporting lime yellow for fire vehicles, and the U.S. Dept. of Transportation's Federal Aviation Administration drafted an advisory circular in 1986 which "strongly recommends" that "yellowish-green (be) the vehicle color standard" for aircraft rescue and firefighting vehicles. The decree affects thousands of U.S. airports.

To assure ready identification of vehicles by control tower personnel, George Legarreta, a civil engineer in the FAA's Office of Airport Safety and Standards, Washington, D.C., says airfield service vehicles including snow and maintenance equipment are mandated to be chrome yellow, a color most readily identified with school buses and close to lime yellow on the visible spectrum.

"If a vehicle is to be purchased, it must follow the standards in the advisory circular," says Legarreta, one of the document's co-authors. "Painting is one of the requirements."

Bertrand Ruggles, airport fire protection specialist at the FAA and another co-author, says the color question has been under study for years.

"Nutty" Driver Factor

"It boils down to whether you can prove safer is the same as more visible," he says. "If you put a lot more nutty drivers in yellow trucks, you're going to have a lot more accidents." Ruggles, however, agrees that yellowish-green, his agency's term for lime green, is highly visible.

"In the color spectrum, yellowish-green falls somewhere in the area where day and night visibility curves cross over. We find that red becomes almost black at night."

To Solomon, saying that a truck is more visible is tantamount to saying it is safer. "The U.S. Air Force has implied this," he says, "and it seems basic. As soon as we made hunters put on bright colors in the woods, the number of hunters killed went down."

Solomon notes that people have been found to have particularly poor peripheral detection of red shades. "Yellow is two times more visible in the periphery than red," he says, "and when you consider that in accident avoidance, reaction time is small, this can well mean the difference in not having an accident."

For privately purchased vehicles, color as a safety measure has so far been of only a limited concern. None of the Big-Three automakers reported undertaking studies in the area of color safety.

Red is still among the most popular auto colors.

Mercedes-Benz of North America, Inc., Montvale, N.J., long an automaker concerned with safety, has studied the issue. Corporate spokesman A.B. Shuman says his company developed a scale for color visibility that enables car buyers to judge the safety of different colors. The best colors for visibility, like lime yellow, are impractical because of aesthetic concerns, he says, adding that fluorescent paints also require repainting sooner than other colors. Still, Mercedes-Benz does not downplay the importance of automobile color and safety.

"The degree of visibility of an automobile paint finish influences traffic safety," says a report by Daimler-Benz AG, Mercedes-Benz' German parent company.

Mercedes-Benz's one-to-100 color safety scale was developed in the 1970s after visibility tests were run near Stuttgart, Germany. On that scale, black rates five percent, compared to arctic white's rating of 73 percent. Signal red rates a low 38. Interestingly, the most popular color among Mercedes-Benz carbuyers Shuman says, is arctic white. Mercedes-Benz has also undertaken other color safety studies.

"For example, black fenders and a white hood were found to make a car look narrower," Shuman says. Regarding two-tones, the National Safety Council has noted that it is safer to choose a car with a highly visible auto body and a sharply contrasting top.

Paints Follow Fashion

A spokesman for DuPont Automotive Products, Detroit, Mich., a major supplier of paints to auto manufacturers in the U.S., says the color of cars is an issue that his company spends a lot of time thinking about. Nevertheless, he knows of no specific color safety tests done by DuPont.

"Our color stylists go to Milan, Paris, Tokyo and New York every year to determine the most fashionable colors," says spokesman Terrence Cressy. "Automotive colors follow trends set by the fashion industry."

About 300 new automotive colors are developed every year by DuPont. The most popular automotive colors in 1990 were red, white and black.

"Whites are gaining in popularity. The reds people like are less warm, and brighter than in the past," says Cressy. Yellows are popular too, and have long been favored in advertising because of their ability to grab attention.

Overall trends for cars, Cressy says, are moving toward lighter and brighter hues. Although less visible, black is increasingly popular because it is not only used for sedans and luxury cars, but also on smaller cars, to which it lends "an overall image of high-tech for a sportier feel."

Most auto industry watchers agree that it will be some time before red is dead when it comes to the car in the family driveway. Consumer taste will continue to be the final arbiter in automotive color trends for years to come.

SURVEY

The Squeaky Wheel That Wobbles

Should the courts require treatment for alcoholic drivers?

Elsewhere in this issue, Judge Albert L. Kramer of Quincy, Mass., questions the conventional wisdom regarding sentencing drunken drivers.

He says the real problem is not social drinkers who might occasionally stray over the legal blood alcohol limit. We catch only a tiny percentage of them anyway. Alcoholics are the true menace to highway safety.

Typical drunk drivers get really drunk and turn up in court time after time. Just putting them in jail doesn't do any good. What sometimes helps is using the threat of jail to force alcoholics to stop drinking entirely.

Judge Kramer doesn't quarrel with existing programs to re-educate first offenders. His argument is that most of the effort is directed toward the lesser of the evils.

What do you think? After answering the questions, you can tear out this page and send it in. Or if you share your copy of TRAFFIC SAFETY with others, you may want to photocopy the page. Then, if we haven't provided enough space, you can write additional comments on the back.

Traffic Safety Survey
National Safety Council
444 N. Michigan Ave.
Chicago, IL 60611

	Yes	No	Undecided
1. Do you agree that the hard-core drunk drivers are more dangerous overall than the large number of social drinkers?			
2. Do you think forcing repeat offenders to attend Alcoholics Anonymous sessions is a proper use of judicial authority?			
3. Do you think Judge Kramer's concentration on alcoholics might distract from progress that has been made in changing the drinking habits of all drivers?			

Comments:

Talking Mobile

TURNPIKE
HELP ?
CELLULAR
* 11

By Thomas Frisbie

In the fall of 1988, Minnesota State Sen. Ronald Dicklich was nearly forced off the road near the state capitol by an unobservant motorist who was using a hand-held cellular telephone.

Soon Dicklich learned he was not the only Minnesota motorist who had encountered such a hazardous situation. Constituents told Dicklich, who lives in Hibbing, Minn., in the state's iron range region, of experiences similar to his own, which occurred on John Ireland Boulevard in St. Paul. In 1989, Dicklich introduced a bill that would have banned the use of handheld cellular phones on the highway.

The bill went nowhere. "Once the bill was introduced, lobbyists for the cellular telephone industry were here contacting legislators. They brought people from outside of the state and did everything that lobbyists do," says Scott Sande, a Dicklich legislative assistant.

Similar bills have been introduced in Arizona, Massachusetts and New Jersey, but none have become law. Meanwhile, new trends in cellular telecommunications are changing the impact of car phones on highway safety—both for the better and, some observers fear, for the worse.

Cellular telephones in cars have given motorists a way to make use of hours once devoted strictly to transit. Time that is spent in bumper-to-bumper traffic now can be used to return phone calls, do some work at the computer and even fax a few key documents.

Cellular phones transmit their messages via radio transmission stations that operate in a series of zones or "cells" in a particular network. Some 700 cellular networks have sprung up across the country. They serve a total number of subscribers that is estimated to have surged from 2.1 million in 1989 to just over five million by the beginning of this year.

Two-thirds of the industry's subscribers have been added in the last two years. Most phones have been placed in service in busy cities, where traffic is more congested and requires extra caution. And, responses to a survey conducted last year indicate that another 27 million people plan to buy a car phone in the next five years.

Authorities Worry

The increase in the number of cellular phone customers worries some authorities.

"Some people can't chew gum and drive at the same time, let alone use a cellular telephone and drive," says Massachusetts State Rep. Charles W. Mann. "Yet car phones are becoming more common as the costs go down. Obviously, more people are using them, and I believe there should be some concern given to safety factors."

If motorists follow the official recommendations of equipment manufacturers, turning a passenger car into a branch office doesn't mean going out on a limb from a safety standpoint. For example, the user's guide for the Fujitsu Commander II X phone asserts: "Paying attention to your driving is your first and foremost responsibility."

The guide suggests the "hands-free" option. This allows a driver to keep both hands on the wheel and both eyes on the road while communicating via a microphone inside the vehicle. The speaker is built into the phone unit. The guide also recommends the use of "memory" dialing, which requires punching only two or three numbers, and reducing speed while phoning, but keeping up with the flow of traffic. "When possible," the guide recommends "dial while your car is not in motion."

Rep. Mann believes too many people don't pay enough attention to such guidelines. Many phones, including the one in his own car, don't even have hands-free capability, Mann says. That's why, in each of the past three years, Mann has introduced in the Massachusetts legislature a bill that would require car phones to have not only hands-free capability, but also the new "voice activation" option.

Voice activation allows a motorist to dial a phone by saying, for example, "Turn on the telephone," and giving the pre-programmed name of the person who is being called. When a call is over, the motorist just says, "Hang up the telephone."

Great Tool

"I am not opposed to mobile phones. I think they are a great tool for many people," says Mann, who already has filed his bill for the 1991 legislative session. When you are driving on the expressway and using a car phone, he says, before you know it you are going too fast or too slow. "You are not thinking about your driving."

Although police on Long Island, N.Y., and in the Wilkes-Barre, Penn., vicinity have ticketed motorists for driving erratically while using car phones, generally cellular subscribers are free of legal restrictions.

Laws requiring safety features on car phones might be in the best interests of the cellular telecommunications companies, because otherwise government eventually could overreact to accidents involving car phones with "regulations that could put these people out of business," Mann says.

Not waiting for such a regulatory climate to develop, the cellular telecommunications industry is promoting the idea that its mobile-phone customers should let their fingers strictly do the driving. (A mobile phone is the industry term for a cellular telephone installed in a vehicle.) Later last year, the industry's trade association started encouraging vendors to sell no car telephones except those equipped with a "hands-free" option.

"It is an industry priority right now to get all of our carriers to offer only mobile units for sale that can be installed with the hands-free option or as a standard feature. We have launched a survey to see how well we are doing on that score," says Norman Black, director of public affairs and communications for the Cellular Telecommunications Industry Association (CTIA). The CTIA is a Washington-based trade association for the cellular telecommunications industry.

The CTIA also is "encouraging the system operators to revise the materials they provide to new subscribers to highlight the fact that safety is an issue when you buy a phone," Black says.

Look, No Hands

Very preliminary survey results indicate that about 80 percent of the car phone models now sold have the hands-free feature, Black says. Voice-activated equipment was not included in the survey because "decent voice-recognition systems are very new and it was the feeling of our safety committee that we should wait a few months to let these things get out on the market and let (sales persons) explain them before we started trying to do some survey." Meanwhile, advances in technology have encouraged the use of the hands-free option because today's car speaker-phones provide quite satisfactory communication. "Our sense through anecdotal evidence from the carriers is that when someone has hands-free installed, they tend to use it," Black added.

That's important because, "Manually dialing 10 numbers can be a real problem," says Anthony C. Stein, Ph.D., the principal staff psychologist at Systems Technology, Inc., in Hawthorne, Calif. "The longer you are taking your eyes off the road, the more problems you are going to have. If people try to put all 10 numbers in at once, that takes their eyes off the road for a much greater time in relation to normal glances at mirrors or even tuning digital radios, which is a pretty time-demanding task."

A lawsuit filed in Boston alleges that a young woman died after a collision in which the other driver had been weaving in and out of traffic while using a car telephone.

No Riskier Than Radio

A research project completed in 1985 by AT&T and the American Automobile Association concluded that car phones posed no more of a safety risk than a digital car radio, Stein said. His own $35,000 study using car phones and driving simulators, undertaken in 1984 and 1985 and paid for by the state of California, supported that view, with the exception of its finding that manually dialing a mobile phone can be dangerous on the highway. Subsequent studies in Scandinavia, which has the highest concentration of mobile telephones in the world, also concluded that the use of car phones does not carry a serious inherent risk.

No one, however, has done intensive research to learn how often the use of mobile phones actually contributes to highway crashes, Stein says.

"There is a way to do that, but it's not cheap," Stein says. "The use of every single car phone is monitored because you pay for the usage by the minute, so the system knows what time you put the phone into service and what time you hang up for every single phone. One of the things you could do if someone had the money to do it would be to look at some number of consecutive accidents, determine whether there is a phone in the car and determine whether the phone was in use."

Even in such an intensive study, only those accidents reported to police would be included, which means minor fender-benders would be overlooked. A thorough investigation also would be necessary to determine whether the use of the mobile phone contributed to the accident or whether, say, the driver was rear-ended at a red light while talking on the phone.

Costly Research

"It would take a lot of work and a lot of dollars to do something like that," Stein says. "To look at 500 collisions like that would probably take $750,000, maybe more. It would be the equivalent of a National Transportation Safety Board investigation into each one of them."

Stein doesn't think it's likely that anyone will come up with the money to do such a study.

"There are very limited research dollars, and in fact today there are probably a quarter of the same dollars as there were 10 years ago, and those dollars aren't worth as much. . . . You've got to pick and choose (research topics). There is an enormous number of questions that we are concerned about that seem to be more important than car phones."

But that doesn't mean the potential risk of car phones is insignificant. A lawsuit filed in Boston alleges that a young woman died in a traffic accident after a collision in which the other driver had been weaving in and out of traffic while using a car telephone. A San Francisco architect, according to a report in the *Wall Street Journal*, caused $2,000 in damage to a van after taking her eyes off the road just long enough to dial a number.

"Most car phone manufacturers and vendors will say you shouldn't use the phone while driving, but I think we all know the vast majority of car phone users do," says Brian O'Neill, president of the Insurance Institute for Highway Safety, a research organization funded by casualty insurers. "(However), it's very, very difficult to do a good study."

In April 1990, the Insurance Information Institute, a separate organization that represents property casualty insurers, devoted a three-page newsletter to the hazards of car phones.

"If you are the driver and are using a car telephone, you should keep the conversation light and easy," says Harvey Seymour, spokesman for the institute. "Operating a vehicle at 55 miles per hour or 65 or 80, as some drivers do in New Jersey, is no time to learn your company lost a multimillion-dollar contract."

Like Other Distractions

Nevertheless, Susan J. Daniels, director of information and concession management for the Florida Department of Transportation's turnpike division, says she doesn't perceive a safety problem with car phones that is any greater than that caused by other distractions, such as smoking.

"What do you go through to smoke a cigarette?" Daniels says. "First, you've got to find a pack, using one or two hands. Then you've got to use one hand to hold the pack and the other hand to get the cigarette out. To light the cigarette, you have to use one hand if you've got a lighter or two hands if you are using matches, unless you are from the Bronx and you know how to fold the match cover down and strike the match without taking it out of the book. You have to use one or two hands either way."

Partly because the amount of time spent dialing car phones is an extremely small percentage of the total driver-hours on the road, Stein concludes that, on balance, "There isn't a perceived (safety) problem."

But that general perception could change as sales of hand-held portable phones increase. That could make highways less safe if their owners try to use those phones while they drive. That's because—although customers can buy a "cradle" that gives a portable phone the hands-free option—most portable phones are sold without the capability of hands-free operation.

> **"Most car phone manufacturers and vendors will say you shouldn't use the phone while driving, but I think we all know the vast majority of car phone users do."**

Role in Safety

Not all trends are worrisome. Around the country, authorities and businesses are beginning to take advantage of the capability of mobile phones to enhance safety.

Commercial radio stations are improving their traffic reports with data phoned in by mobile-phone users. Anti-drunken driving groups encourage mobile-phone users to alert police when they see a motorist who appears to be intoxicated. And in Illinois and Pennsylvania, special mobile-phone emergency numbers have been set up to allow motorists to alert police to hazardous situations or to summon help to the scene of an accident.

In Pennsylvania, motorists using the 470-mile turnpike system have been able since July 4, 1990, to contact state police directly by dialing *-1-1. (A 78-mile stretch of turnpike between Kittatinny Tunnel and Allegheny Tunnel is not included because there is no cellular operator covering that region.)

Turnpike officials say they are pleased with the results. For the week beginning Oct. 28, 1990, for example, Pennsylvania state police received 278 calls, about 10 percent of which were bonafide emergencies. The rest were calls from motorists who wanted directions or information about traffic backups, says Sally Branca, director of public information for the Pennsylvania Turnpike Commission. Nonemergency calls are referred to a different telephone number, she says.

Such systems allow authorities to take advantage of cellular telephones' potential for enhancing safety. Branca says, "I have been out on the road where people were using car telephones, and I get nervous because I feel like they are not paying complete attention to their driving. But they are out there, especially in the Philadelphia area—where a large percentage of drivers have them—and we felt they could be put to a good purpose."

Black says those in the cellular industry believe mobile phones have a great potential for improving highway safety.

"We honestly believe that the safety of the entire motoring public is enhanced the more there are phones out on the road—the more that people have access to instant communications," says Black.

Regulation Likely

Rep. Mann of Massachusetts believes that some type of regulation will be needed to ensure that mobile phones are as safe as possible. He says that he isn't discouraged by his inability so far to get a law enacted. He says he introduced his bills after reading news media accounts of several "accidents that have been caused by people using a cellular mobile phone."

Mann says, "I've been around here a long time." He has served in the legislature for 20 of the last 24 years. "I've filed a bill sometimes for years, and then suddenly everyone is filing the bill when it becomes a popular thing to do."

Seymour agrees that the safety aspects of car telephones require careful attention, even if such phones are not the most pressing safety issue on the highways.

"We have 34 million accidents a year," Seymour says. "We don't need any others."

Bus Safety Belts Would Squeeze School Budgets

I feel a need to comment on the safety belt article referencing a study by the New Jersey Institute of Technology. ("Today's Traffic," Nov/Dec, 1990).

Let me preface my comments by stating there is no one more dedicated to the safety of students than those of us who are in the business. I do not disagree that safety belts would be an added safety factor for all bus riders, but there are some variables that must be considered:

1. Installment cost
2. Enforcement
3. Maintenance

The cost of safety belt installation and maintenance would be a significant added cost burden to school bus districts already lacking ways to reduce transportation costs.

Those of us in the business can testify it would be virtually impossible to enforce the use of these belts unless a bus assistant was added to each bus - increasing the cost even more! We experience seat slashing and other acts of vandalism in our current operations. Try to visualize the cost of repairing/replacing seat belts on a fleet of school buses.

While I acknowledge that we should do all that we can to protect the safety of school bus riders, there must be an evaluation of what is practical, affordable and enforceable. These viewpoints are my own and not necessarily endorsed by my company.

William R. Jacobson
Driver, Safety Trainer
Mayflower Contract Services
Ogden, Utah

Any Comments?

"Two-Way Street" is *your* forum; a place for ideas and opinions on issues important to traffic safety professionals as well as comments about articles in previous issues of *TRAFFIC SAFETY*.

Please address letters to "Two-Way Street," *TRAFFIC SAFETY* Magazine, 444 N. Michigan Ave., Chicago, IL 60611.

Letters may be edited for clarity or because of space.

Whoops!

I'm writing in reference to an article, "Drug Tests on the Job," in the Jan.-Feb. issue of *Traffic Safety*. The article has a statement on page 8 that I believe is untrue: "A poppy seed roll could make you test positive for cocaine." The statement is made with regard to reliability of testing procedures. True, tests can be in error. However, with the new equipment and methods used for testing, the margin of error is reduced to tenths of a percent. As a Texas Department of Public Safety chemist states, "If a person tests positive for cocaine after eating poppy seed rolls, you can bet your annual salary the cocaine didn't come from the poppy seeds."

Several studies have been done by several research laboratories with regard to positive opiate results from eating poppy seeds in food products. The findings vary from "you will" to "you won't." Depending on the type of test given and the amount of the product consumed, you may test positive.

There are only a couple of poppy plants that produce opium. All poppy plants produce similar alkaloids. If the seeds are consumed, you may get a positive result for opiates.

Some suggestions for the person who eats poppy seeds on occasion: should you be tested positive for opiates, ask for a retest and request the more sophisticated Gas Chromotography / mass spectrometry test (GCMS) be used.

I am in agreement with drug testing of all persons who may be in a position to cause harm to themselves or others due to their drugged conditions.

I appreciate *Traffic Safety* magazine and learn from every issue. I just felt that we don't need to give the cocaine users an alibi, "I've been eating those poppy seeds."

Trooper Thomas Mobley SES
Texas Department of Public Safety
Austin, Texas

Editor's Note: Dr. Charles Craver, George Washington University Law School, regrets the error in his statement regarding poppy seeds. He says he inadvertently said "cocaine" instead of "heroin." However, Dr. Craver says his main point is that drug testing, in general, has to be done very carefully. He encourages employers to allow an employee to obtain a GCMS in the event of a positive test result rather than to fire an employee with a negative result from a preliminary-enzyme - multiplied - immunoassay technique (EMIT.)

NEW PRODUCTS

System Alerts Roadway Workers

WARNING SYSTEM

SAFELANE System is a computer-based warning system designed to instantaneously alert workers when an errant vehicle enters a roadway work zone. The "intelligent" system works without creating additional danger to motorists. — **COMARCO,** 2 Sundown Pass, Irvine, CA 92714

BICYCLING EXPERTS

The "1990-1991 Pro Bike Directory" lists more than 1,000 experts in bicycle safety education, facility development and event promotion. The directory contains contact and program information for individuals, organizations and government agencies involved in bicycling on a city, state, regional or national level. Many Canadian contacts are also listed.

The guide includes names of individuals involved in children's bicycle safety, helmet promotion, pedestrian safety and planning, off-road bicycling, event promotion, and facility planning. — **Bicycle Federation of America,** 1818 R St. NW, Washington, DC 20009.

TRAFFIC MONITOR

The new Roadtrax™ Series R piezoelectric traffic sensor is a low-profile traffic data collection system. The system can be used to monitor vehicle count, speed, weight-in-motion, vehicle classification, and to monitor double wheel axles, parking areas and toll booths.

The sensor is designed for temporary installation on the surface of any roadway. The unit receives the full impact of a vehicle's weight and can endure approximately three million axles during its lifespan, according to the manufacturer. The system can be installed easily in minutes, and is removable and reusable. — **ATOCHEM Sensors, Inc.,** P. O. Box 799, Valley Forge, PA 19482.

SPILL CONTAINERS

Slikwik Spill Containers provide on-site convenient storage for cleaned up spill materials. The containers hold an absorbent that is applied to the spill and returned to the container to be stored temporarily until it is disposed of properly.

The containers are available with one of three types of Andersons absorbents. Slikwik SOC absorbents have a patented all-natural filler with powerful wicking action; each 46-inch long unit can absorb up to one gallon of liquid. Allwik SOC absorbents have a non-biodegradable filler that soaks up oil, water and most industrial fluids. DRI SO~~RB granular~~ absorbent soaks up heavy oils, most chemicals and other industrial fluids. Absorbents may be customized to meet special requirements.

The containers feature a locking, child-resistant lid and are approved by the Department of Transportation. — **Slikwik Sorbents,** P. O. Box 119, Maumee, OH 43537.

ACCESS SIGNS

Seton Name Plate offers a complete line of Symbol of Access signs to help businesses conform with government regulations on making buildings accessible to the physically handicapped. The company offers a "sign for most any purpose and environment."

Signs made of heavy gauge steel for use outdoors, as well as polished plastic, engraved and vinyl signs for indoor use are available. In addition, custom signs can be made to conform with state laws.

All the mounting equipment needed to install and maintain the signs is available. The signs meet the requirements of ANSI A117.1 and the Rehabilitation Act of 1973. — **Seton Name Plate Company,** P. O. Box ZIA-1331, New Haven, CT 06505.

LIBRARY

Responsibility for Reduced Casualties

Accidents

Oram, F. W., "Casualty Reductions — Whose Problem?" *Traffic Engineering & Control,* 29 Newman St., London W1P 3PE, England. Vol. 31, No. 8/9, September 1990, pp. 474-479.

Insurance Injury Report: Passenger Cars, Vans, Pickups, and Utility Vehicles, 1987-89 Models. September 1990. Highway Loss Data Institute, 1005 North Glebe Road, Arlington, VA 22201. 38 pp.

Waller, P. F., Dischinger, P. C., Popkin, C. L., *Proceedings of the Association for the Advancement of Automotive Medicine,* October 2-4, 1989, Baltimore, Md. 1990. Association for the Advancement of Automotive Medicine, 2350 East Devon Ave., Ste. 205, Des Plaines, IL 60018. 458 pp.

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Alcohol

Gonzalez, G. M., "Effects of Drinking Age on Reduced Consumption of Alcohol Reported by College Students: 1981-1986." *Journal of Drug Issues,* Box 4021, Tallahassee, FL 32303. Vol. 20, No. 1, Winter 1990, pp. 67-73.

Perrine, M. W., "Who Are the Drinking Drivers?" *Alcohol Health & Research World,* P.O. Box 2345, Rockville, MD 20852. Vol. 14, No. 1, 1990, pp. 26-35.

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Eisenhandler, S. A., "The Asphalt Identikit: Old Age and the Driver's License," *International Journal of Aging and Human Development,* 26 Austin Ave., Box 337, Amityville, NY 11701. Vol. 30, No. 1, 1990, pp. 1-14.

Johnson, M. L., Crabb, O., Kaywood, R. *Drive Right: A Responsible Approach,* 8th Edition. Teacher's Edition. 1991. Scott Foresman & Co., 1900 East Lake Ave., Glenview, IL 60025. 448 pp.

Taoka, G. T., "Duration of Drivers' Glances at Mirrors and Displays," *ITE Journal,* 525 School St., N.W., Ste. 410, Washington, DC 20024. Vol. 60, No. 10, October 1990, pp. 35-39.

Please Note: Library is prepared by the National Safety Council Library — Robert Marecek, manager. The National Safety Council Library is unable to supply any of the materials listed here. For your convenience, the names and addresses of the publishers are listed.

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Matthias, H. M., "Understanding American Drivers," *Transportation Quarterly,* Box 2055, Westport, CT 06880-0055. Vol. 44, No. 4, October 1990, pp. 607-614.

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Moore, T. L., "Truck Cabs: Improving the Safety Envelope," *Fleet Owner,* 1221 Ave. of the Americas, New York, NY 10020. Vol. 85, No. 11, November 1990, pp. 95-98, 100.

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Schweig, K. H., "Pedestrian-Related Goals and Innovations, Step by Step," *Transportation Quarterly,* Box 2055, Westport, CT 06880-0055. Vol. 44, No. 4, October 1990, pp. 595-606.

Speeds & Speeding

Uri, N. D., "Factors Affecting Adherence to the 55 MPH Speed Limit," *Transportation Quarterly,* Box 2055, Westport, CT 06880-0055. Vol. 44, No. 4, October 1990, pp. 533-547.

Traffic Engineering

Orski, C. K., "Can Management of Transportation Demand Help Solve Our Growing Traffic Congestion and Air Pollution Problems?" *Transportation Quarterly,* Box 2055, Westport, CT 06880-0055. Vol. 44, No. 4, October 1990, pp. 533-547.

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Wassmann, R., "The Cost of Hazardous Waste Transportation," *Environmental Waste Management,* 243 West Main St., Kutztown, PA 19530. Vol. 8, No. 9, September 1990, pp. 8-10.

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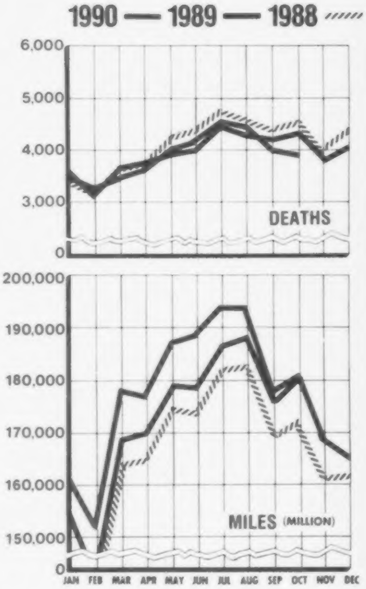
October Traffic Deaths Down 9%

By Mary E. Johnston and Ursula Zuehlke

TRAFFIC SUMMARY

Month	Deaths 1990	Deaths 1989	Change
October	3,920	4,310	– 9%
10 months	38,970	39,100	– *%
12 months (Ending October 1990)	46,770	47,430	– 1%



Motor-vehicle deaths in October totaled 3,920, a decrease of 9 percent from the October 1989 total of 4,310.

Deaths for the ten-month period ending October totaled 38,970, a decrease of less than one half of one percent from the 1989 ten-month total of 39,100.

Disabling injuries for 1990 are estimated to be slightly more than 1,400,000. These are injuries resulting in disability beyond the day of the accident, and do not include minor injuries, which probably totaled as many more.

The cost of motor-vehicle accidents for 1990 is estimated to be more than $60 billion.

Based on preliminary vehicle mileage reports for this year, the estimated annual mileage death rate is 2.3 (deaths per 100 million vehicle miles).

State Experience

Among the 48 states reporting October experience, 26 states and the District of Columbia had fewer deaths than in the preceding October, and 21 states showed increases in deaths. One state showed no change in the number of fatalities. For the ten-month period, 25 states and the District of Columbia showed decreases in the number of deaths, while 23 states showed increases.

Vermont	–20%
New Hampshire	–17%
Utah	–15%
Rhode Island	–14%
Iowa	–12%
Massachusetts	–11%
Nebraska	–10%
Minnesota	– 8%
California	– 7%
Illinois	– 7%
North Carolina	– 7%
Ohio	– 6%
Oregon	– 5%
New Mexico	– 4%
New York	– 4%
Arkansas	– 3%
Connecticut	– 3%
Texas	– 3%
Florida	– 2%
Georgia	– 2%
Michigan	– 2%
South Dakota	– 2%
Arizona	– 1%
Oklahoma	– 1%
Wisconsin	– 1%

State Traffic Deaths

Deaths are reported by state traffic authorities. All figures are preliminary. To ensure proper comparisons, 1988 and 1989 figures cover the same reporting period as those for 1990.

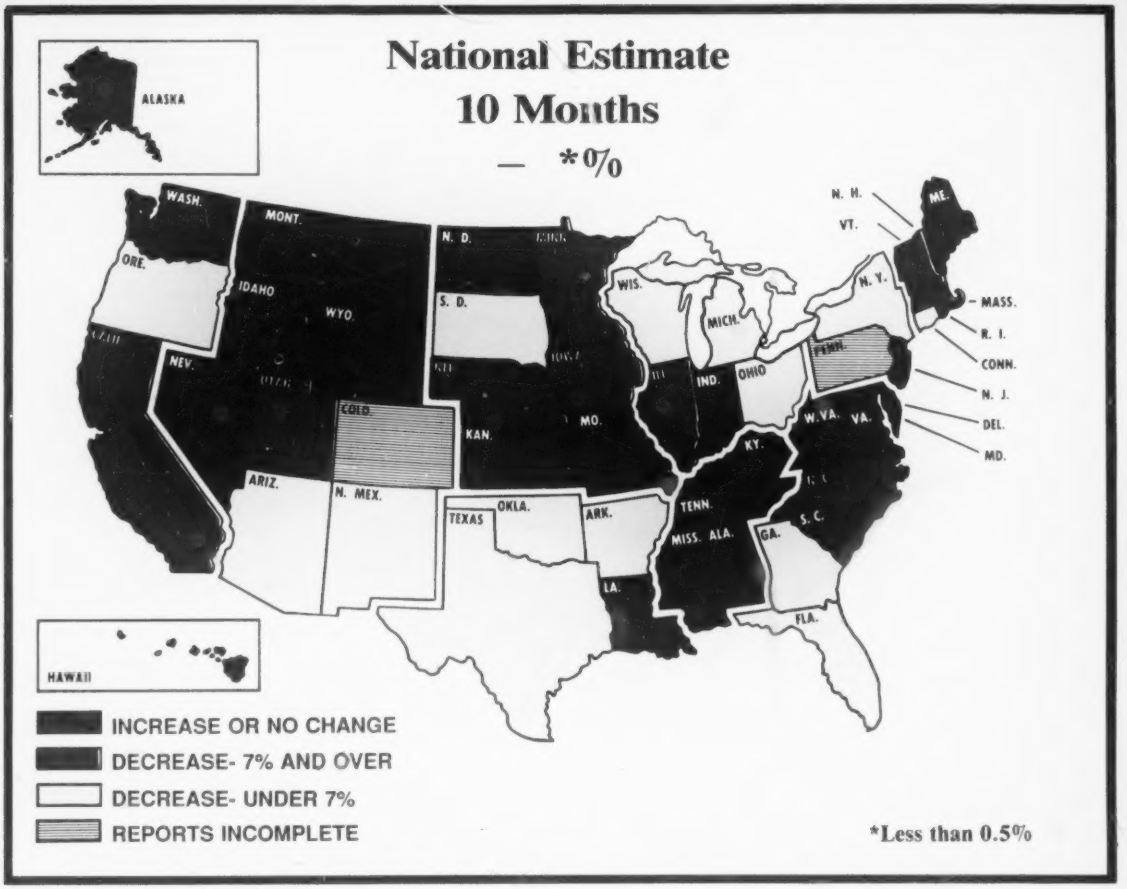
States shown in CAPS had fewer deaths in 1990 than they did in 1989 for the same reporting period.

Population Rate: U.S. population rate and state population rates are the estimated annual number of deaths per 100,000 population. U.S. population rate is based on the July 1, 1990, population estimate; state population rates are based on July 1, 1989, population estimates, U.S. Bureau of the Census, Washington, D.C.

Mileage Rate: The number of deaths per 100 million vehicle miles of travel.

		DEATHS IDENTICAL PERIODS			PERCENT CHANGES			
STATE	NO. OF MOS.	1990	1989	1988	1989 TO 1990	1988 TO 1990	1990 POP. RATE	1990 MILE. RATE
Total U.S.	**10**	**38,970**	**39,100**	**40,570**	– *%	– 4%	**18.6**	**2.3**
Alabama	10	896	834	837	+ 7%	+ 7%	26.1	2.4
Alaska	10	79	72	78	+ 10%	+ 1%	18.0	2.7
ARIZONA	10	710	715	765	– 1%	– 7%	24.0	2.5
ARKANSAS	10	513	531	494	– 3%	+ 4%	25.6	3.1
CALIFORNIA	10	3,978	4,295	4,151	– 7%	– 4%	16.4	1.9
Colorado	9	412	384	389	+ 7%	+ 6%	16.6	2.1
CONNECTICUT	10	319	329	402	– 3%	– 21%	11.8	1.5
Delaware	10	111	94	141	+ 18%	– 21%	19.8	2.0
D. OF C.	10	41	68	53	– 40%	– 23%	8.1	1.5
FLORIDA	10	2,451	2,501	2,538	– 2%	– 3%	23.2	2.7
GEORGIA	10	1,296	1,326	1,309	– 2%	– 1%	24.2	2.4
Hawaii	10	146	119	127	+ 23%	+ 15%	15.8	2.1
Idaho	10	205	197	233	+ 4%	– 12%	24.3	2.8
ILLINOIS	10	1,297	1,400	1,543	– 7%	– 16%	13.4	2.0
Indiana	10	877	796	885	+ 10%	– 1%	18.8	2.0
IOWA	10	380	433	452	– 12%	– 16%	16.1	2.0
Kansas	10	376	346	394	+ 9%	– 5%	18.0	2.2
Kentucky	10	705	646	690	+ 9%	+ 2%	22.7	2.5
Louisiana	10	667	657	725	+ 2%	– 8%	18.3	2.2
Maine	10	172	171	198	+ 1%	– 13%	16.9	1.8
Maryland	10	631	619	646	+ 2%	– 2%	16.1	1.9
MASSACHUSETTS	10	487	549	576	– 11%	– 15%	9.9	1.4
MICHIGAN	10	1,290	1,320	1,393	– 2%	– 7%	16.7	2.0
MINNESOTA	10	441	481	515	– 8%	– 14%	12.2	1.4
Mississippi	10	596	587	566	+ 2%	+ 5%	27.3	3.3
Missouri	10	929	854	893	+ 9%	+ 4%	21.6	2.4
Montana	10	184	156	156	+ 18%	+ 18%	27.4	2.8
NEBRASKA	10	217	242	225	– 10%	– 4%	16.2	1.9
Nevada	10	288	252	239	+ 14%	+ 21%	31.1	3.6
NEW HAMPSHIRE	10	131	158	137	– 17%	– 4%	14.2	1.6
New Jersey	10	725	707	854	+ 3%	– 15%	11.2	1.4
NEW MEXICO	10	424	441	421	– 4%	+ 1%	33.3	3.3
NEW YORK	10	1,696	1,763	1,724	– 4%	– 2%	11.3	1.9
NORTH CAROLINA	10	1,141	1,229	1,289	– 7%	– 11%	20.8	2.4
North Dakota	10	89	67	87	+ 33%	+ 2%	16.2	1.9
OHIO	10	1,281	1,356	1,395	– 6%	– 8%	14.1	1.9
OKLAHOMA	10	543	550	541	– 1%	+ *%	20.2	2.0
OREGON	10	492	519	551	– 5%	– 11%	20.9	2.4
Pennsylvania	8	1,050	1,213	1,135	– 13%	– 7%	13.1	1.9
RHODE ISLAND	10	73	85	107	– 14%	– 32%	8.8	1.5
South Carolina	10	841	812	865	+ 4%	– 3%	28.7	3.4
SOUTH DAKOTA	10	131	134	115	– 2%	+ 14%	22.0	2.4
Tennessee	10	966	879	1,037	+ 10%	– 7%	23.5	2.4
TEXAS	10	2,673	2,758	2,754	– 3%	– 3%	18.9	2.1
UTAH	10	219	258	263	– 15%	– 17%	15.4	2.1
VERMONT	10	71	89	99	– 20%	– 28%	15.0	1.5
Virginia	10	913	838	881	+ 9%	+ 4%	18.0	1.8
Washington	10	706	631	652	+ 12%	+ 8%	17.8	1.9
West Virginia	10	393	390	383	+ 1%	+ 3%	25.4	3.2
WISCONSIN	10	669	677	693	– 1%	– 3%	16.5	1.9
Wyoming	10	113	104	128	+ 9%	– 12%	28.5	2.5
Puerto Rico#	2	86	103	114	– 17%	– 25%	18.9	—
Virgin Islands#	10	21	7	15	+ 200%	+ 40%	45.3	—
— CANADIAN PROVINCES —								
Alberta	10	340	398	384	– 15%	– 11%	25.8	—
British Columbia	9	491	421	455	+ 17%	+ 8%	30.9	—

#Not included in the TOTAL U.S. death count or rates.
*Less than 0.5%.


National Estimate
10 Months
— *0%
ALASKA
HAWAII
WASH.
ORE.
MONT.
IDAHO
WYO.
NEV.
ARIZ.
COLO.
N. MEX.
N. D.
S. D.
KAN.
MO.
TEXAS
OKLA.
ARK.
LA.
WIS.
MICH.
IND.
OHIO
KY.
TENN.
MISS.
ALA.
GA.
FLA.
S. C.
W. VA.
VA.
PENN.
N. Y.
N. H.
VT.
ME.
MASS.
R. I.
CONN.
N. J.
DEL.
MD.
INCREASE OR NO CHANGE
DECREASE- 7% AND OVER
DECREASE- UNDER 7%
REPORTS INCOMPLETE
*Less than 0.5%

MOTOR-VEHICLE DEATHS AND CHANGES TOTAL U.S.

	Deaths				Percentage Changes				
					Corresponding Month			4-Month Moving Average +	
Month	1987	1988	1989	1990	1988-1990	1988-1989	1989-1990	1988-1989	1989-1990
January	3,301	3,390	3,540	3,480	+ 3%		− 2%		− 5%
February	2,997	3,130	3,090	3,290	+ 5%		+ 6%		− 3%
March	3,517	3,600	3,660	3,440	− 4%		− 6%		− 3%
April	3,621	3,760	3,720	3,620	− 4%		− 3%		− 1%
May	4,264	4,210	3,900	4,020	− 5%		+ 3%		0%
June	4,279	4,320	3,980	4,150	− 4%		+ 4%		− *%
July	4,472	4,720	4,460	4,570	− 3%		+ 3%		+ 2%
August	4,815	4,550	4,250	4,480	− 2%		+ 5%		+ 4%
September	4,300	4,370	4,190	4,000	− 8%		− 5%		+ 2%
October	4,535	4,520	4,310	3,920	− 13%		− 9%		− 1%
10 Months	40,101	40,570	39,100	38,970	− 4%		− *%		
November	4,169	3,980	3,770			− 5%		− 5%	
December	4,020	4,350	4,030			− 7%		− 5%	
TOTAL	48,290	48,900	46,900	47,350 ‡		− 4%			

The 1987 figures are from the National Center for Health Statistics. The 1988, 1989 and 1990 figures are National Safety Council estimates.

+ Four-Month Moving Average is based on changes between the totals for four months instead of one month. For example, the October figure shows the change between the totals for July 1989 - October 1989 and July 1990 - October 1990, etc. Adding several months together tends to smooth out single-month changes which may be affected by differences in the number of weekends in a month from one year to the next, random variations, etc.

‡ Deaths for the 12-month period ending October 1990.

*Less than 0.5%.

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National Safety Council

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April 2nd & 3rd
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Thursday, April 4th
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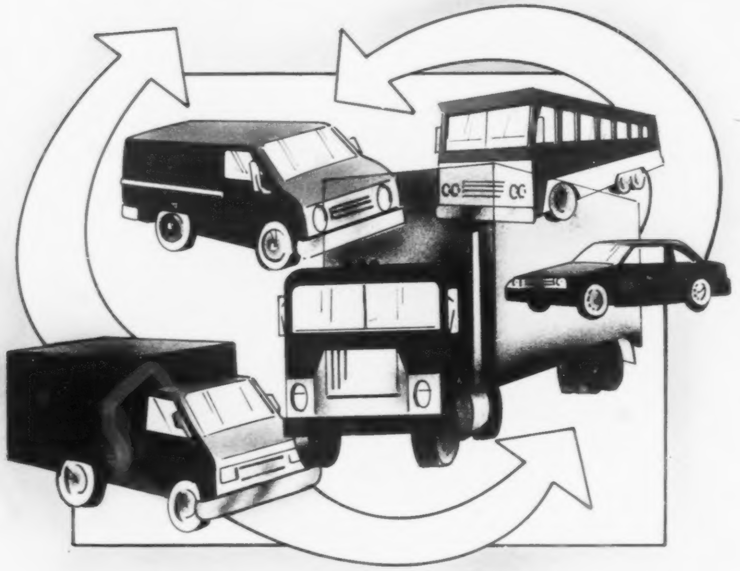

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Nation Needs Research to Reduce Collisions

Motor vehicle collisions are a "national (public health) problem of the magnitude of cancer and heart disease" that likely will worsen without an intensified program in highway research, a National Research Council committee warns.

Nearly 18 million collisions, 4 million injuries and 45,000 fatalities occur each year on the nation's highways. The committee claims that even without quantification of the pain and suffering endured from these crashes, the drain on society's resources is enormous. It points to more than $40 billion in lost wages and medical costs and $30 billion in property damage each year.

At the same time, annual federal support for highway safety research has dropped nearly 40 percent in the past decade, to an estimated $35 million.

This level of spending, the committee says, is disproportionate to the size of the problem and the opportunity for reducing loss.

The committee adds that the nation is spending roughly 8 times as much on victims of heart disease and nearly 17 times as much on victims of cancer per year of productive life lost.

"We have to get back on track with research funding, after the reductions of the 1980s, or we cannot expect the number of fatalities or injuries from motor vehicle crashes to do anything but increase and impose unacceptable economic and social costs on society," says A. Ray Chamberlain, committee chair and director, Colorado Department of Highways.

The committee calls for current annual federal funding to increase by $30 million to $40 million and grow annually at 5 to 7 percent (after adjustment for inflation) over the next five to 10 years. The funds should be administered by the two primary agencies that sponsor highway safety research: the National Highway Traffic Safety Administration (NHTSA) and the Federal Highway Administration (FHWA).

Research has played a vital role in the development of key safety improvements such as airbags, antilock brakes, energy-absorbing steering columns, roadside barriers that break away on impact, and law enforcement strategies and licensing techniques to deter drunk driving. Yet the cut in research funds has eliminated many programs and forced scientists trained in highway safety to leave the field, says the committee.

In addition, a growing population of older drivers and pedestrians; an increasing mix of larger trucks and smaller cars, bicycles and motorcycles; heavier traffic; and an aging infrastructure — all compounded by the drop in the level of funding — could diminish safety in the coming years, warns the committee.

The committee identified six priority areas that demand serious attention: crash avoidance and human error, occupant protection, acute care and rehabilitation, highway safety management, driver information and vehicle control technologies, and highway design.

According to the committee, a new cooperative program for state-sponsored highway safety research should be created "to encourage more state funding and to stimulate joint projects between states" on driver- and vehicle-related issues that otherwise might not receive attention.

Although further safety gains can be realized by the application of the knowledge already gained, the committee says that the capacity to address emerging problems is not being developed.

Traffic Enforcement May Affect Crime

A $218,975 contract was awarded to the Northwestern University Traffic Institute to study the effects of traffic enforcement on crime. The project's goal is to demonstrate that a well-designed traffic safety program provides benefits to a community in all areas of law enforcement. The contract was awarded by the Office of Enforcement and Emergency Services of the National Highway Traffic Safety Administration (NHTSA).

"The institute has always advocated a strong, visible traffic safety program that will generate benefits beyond traffic safety," says Roy E. Lucke, associate director of research and development for the traffic institute, who is heading the NHTSA study. "Many students. . .tell us how a traffic-related program had a significant impact on criminal activity in their communities. Unfortunately, this type of information has never been clearly documented. The NHTSA project should provide the beginnings of that documentation."

In Phase I of the study, researchers will collect and synthesize already-known information about the relationship between enforcement of traffic safety laws and reduction in criminal activities. The research team will also solicit reports from members of the law-enforcement community documenting the impact of traffic enforcement on criminal activity in their communities. In addition, the team will conduct telephone interviews with law-enforcement agency managers.

Once authorized, Phase II of the study will demonstrate, in a field setting, the measurable impact of specific traffic enforcement strategies on criminal activity. The team will design a quantitative test to evaluate these strategies.

Literacy Program Helps Truck Drivers

A new computer-assisted reading course is helping to keep the nation's truck and bus drivers on the road. The literacy course, developed by Pennsylvania State University researchers, coaches drivers for the commercial driver's license (CDL) examination now required by law.

The program was developed to help the estimated one-third of commercial drivers who are functionally illiterate and would have difficulty passing the exam.

Called ROAD to Success — ROAD stands for Real Opportunities for Advancement and Development — the program consists of 100 hours of instruction.

The reading course, written at a 6th- to 8th-grade level, appears to be achieving its goal. "We found that the drivers who used the program performed significantly better on the tests than those who didn't," says Brett Bixler, a member of the design team. "In fact, at the end of our pilot tests, more than half of the workers who had been predicted to fail the exam passed it."

Drivers from 16 states are using the course and another five states are considering using it. For more information, call (814) 863-3777.

Crash Simulator

Called "the next frontier for safety simulation," a new computer program to demonstrate what happens to drivers and passengers under varying crash conditions is enabling General Motors Corp. to more quickly and efficiently assess the effectiveness of safety features such as safety belts and air bags in its new cars and trucks.

The "occupant dynamic simulation" allows product engineers to evaluate a combination of factors prior to building and crash-testing a prototype of a particular vehicle, according to Dr. Robert A. Frosch, vice president of GM Research Laboratories. The design program will bring passive safety restraints, such as air bags, to market more quickly and effectively, he says.

"The design simulation supports our aggressive goal to install air bags on nearly all models by 1996," he says. "The simulation represents a significant cost and time savings."

A prototype crash test can cost from $250,000 to $750,000 and requires weeks of engineering preparation. Using the new program, an occupant dynamics simulation can be run in a few minutes at a cost of only $100 in computer time.

High Tech Safety Belts

Automaker BMW has designed a new safety-belt system that helps reduce safety-belt-caused injuries during a collision, according to the manufacturer.

The new safety-belt system applies a design that integrates the safety belt into the seat "shell" to keep occupants more securely positioned in the seat during a collision. The system's shoulder belt is anchored in a locking/clamping reel just behind the occupant's shoulder, allowing it to be shorter than a conventional belt. Because of this, the belt stretches less when it is restraining the wearer, making impact with steering wheel or dashboard less likely, according to BMW.

The system also has an almost-horizontal belt that runs from reel to shoulder, which helps the occupant begin "riding down" the crash with the vehicle structure earlier and reduces the forces the belt puts on the body. In addition, the seat-anchored shoulder belt wraps closely around the body, keeping the occupant more firmly in the seat and better restrained. The new safety-belt system is standard equipment in the company's new state-of-the-art sports coupe, the BMW 850i.

SHORTCUTS

Safety Program Reduces School's Insurance

A private school in Virginia that is owned and operated by the Kingdom of Saudi Arabia was able to reduce its vehicle insurance rate by 60 percent, thanks to the school's successful accident-prevention program.

The Islamic Saudi Academy (ISA) owns, operates and maintains a fleet of late-model buses that provide door-to-door transportation to nearly all the school's 800 students. Students come from counties in Virginia, Maryland and Washington, D.C. to the pre-kindergarten through 12th grade school.

All ISA buses are equipped with the following safety features: a safety belt for every passenger, roof vents (escape hatches), eight lamp warning lights, stop arms, crossing guard arms, pop-out emergency windows, security vandal locks, two-way radios and dashboard-mounted total lighting system monitors.

The school's accident investigation unit analyzes all accidents, and, when it detects a deficiency that led to an accident, the unit provides involved drivers with counseling and remedial training.

ISA bus drivers are carefully screened. Each applicant must be able to read, write and speak English. In addition, applicants must have at least four years of driving experience, no prior convictions for driving while under the influence of alcohol or other drugs, and must not have been assigned to a driver-improvement or rehabilitation program.

Drivers with three or more moving violations in the past five years, or more than one moving violation in the past three years, are disqualified. Twice a year, the academy checks the driving records of all drivers.

Applicants are also required to provide a physician's certificate stating they are free of any conditions that could impair their abilities to drive a school bus safely. Other requirements of employment include certificates of good moral character and lack of a criminal record, completion of a course in first aid and CPR, absence of communicable diseases and successful completion of the academy's paid three-week training program.

All drivers attend a two-hour, in-service training program once a month, for which they are paid. The academy is a Defensive Driving Course (DDC-8) training center which uses materials from the National Safety Council.

Are America's Bridges Falling Down?

Evidence points to serious conditions.

By Mark Shuman

While on tour of Universal Studios in Hollywood, people experience various thrills, including the Collapsing Bridge. On this ride, tourists cross a bridge originally created for the "Bionic Woman" television show. Suddenly, the bridge shudders and realistically seems to crash down around them.

"People like it because there's that split-second combination of fear and surprise," says the theme park's spokesman, Jim Weager. "But they soon realize that it's fun and they're seeing how a special effect is created."

Elsewhere in the country, problems that plague America's bridges are not a figment of imaginative minds, though federal, state and local safety officials might wish they were.

Bridges "Deficient"

Take New York. A city official says among the 842 bridges under local jurisdiction (the total number of bridges in New York tops 2,000), 56 percent are "deficient."

These "deficiencies" are complex. Last year, the Williamsburg Bridge was closed for four months for stopgap repairs. Since last year, inspectors have known that several support beams on the Manhattan Bridge have come perilously close to slipping. This suspension bridge, a second vital link between Brooklyn and Manhattan, was built in 1909.

Among other problems, the slipping beams posed a threat to subway trains that run along the landmark bridge's south rim. Consequently, an $8.8 million short-term repair job was recently started. While work continued, subway train service on the south side of the bridge had to be rerouted.

Meanwhile, on the bridge's lower roadway, a three-ton weight restriction was imposed on traffic. Because of pinched city finances, weight inspectors were not available nights and weekends. During these

Courtesy: International Bridge, Tunnel & Turnpike Association

Lighting technicians walk the cable as they install lights on the San Francisco-Oakland Bay Bridge.

periods, the lower roadway was closed.

Just when the Manhattan Bridge will be fully operational is anyone's guess. More repairs will begin this fall. And while inspections on the other three East River bridges continue, more problems are occurring.

Repairs: $1 Billion

"By the end of this decade, New York bridges will need about $1 billion in repair costs," says Joe DePlasco, a spokesman for New York City's Office of Transportation. "We're concerned long-term, too, because later this year when the federal re-authorization of the Surface Transportation Act is passed, we could lose $2.2 billion in federal aid over five years."

New York's troubled finances may be extreme. But transportation managers everywhere wonder who will pick up the bill for bridge maintenance in the 1990s and beyond. Anti-tax sentiment and the enormous federal budget deficit have provided the windup on a one-two that public officials hope will not be a knockout punch.

New York's DePlasco says part of the bridge problem in the United States was born with federal legislation passed in the 1950s. Localities throughout the country purposely began to ignore ongoing maintenance projects, he says, so bridges would deteriorate sufficiently to qualify for federal funds.

Bridges Collapse

In 1991, it is clear that the nation's bridges need an overhaul. A single statistic tells a lot: In an average year, about 150 U.S. bridges collapse.

Also telling is a report released in late 1989 by the U.S. Department of Agriculture's Office of Transportation (USDA). The study finds that nearly half the bridges in rural America are either "functionally obsolete" or "structurally deficient."

A quarter of the nearly half-million rural bridges are classified as structurally deficient. A fifth are considered functionally obsolete. According to federal guidelines, structurally deficient bridges must be closed or allowed to remain open only with weight restrictions.

Functionally obsolete bridges

have major problems requiring closure, or they may just be old. (For those keeping a local scorecard, the USDA reported that the most structurally deficient rural bridges were in Missouri. Arizona has the most acceptable bridges.)

Aging Is a Problem

The government report also states that the average age of a U.S. bridge is 35 and a half years. Typically, rural bridges are slightly older than that, and urban area bridges are newer.

Some experts say 50 years is dangerously old for bridges. Compounding the age problem are higher speed limits and increased truck weights. Weight restrictions on bridges are often not enforced because of manpower shortage at all government levels.

Nearly half the bridges in the United States should be repaired or replaced.

Local governments are responsible for 56 percent of all rural bridges. About 77 percent of urban bridges are part of the federal transportation system. According to the USDA report, bridges in the federal system carry 90 percent of the daily bridge traffic.

The USDA is not alone in its findings. A recent biannual U.S. Department of Transportation (DOT) study finds that the 570,000 bridges that serve state, federal and local roads could be the weakest link in the U.S. infrastructure network.

Half Need Work

The study, underwritten by the Federal Highway Administration (FHWA), finds that nearly half the bridges in the United States should be repaired or replaced. It cautions that the costs could reach $5 billion a year or up to a staggering $93 billion through 2005.

More than three-quarters of the ailing bridges are found in rural areas where manpower is often the most strained, the report notes. FHWA's David Densmore and many other transportation officials now believe the day of reckoning for bridges has arrived.

Generally, state and local governments pay for about 20 percent of bridge repairs. The federal government picks up the rest. But local officials say they simply need more money to do their jobs adequately. Some officials say that bridge inspections should become more thorough as the national bridge system ages.

Collapse Killed Eight

Ironically, even with inspections, accidents do happen. Eight motorists were killed when the Hatchie River bridge collapsed in 1989. The bridge, 45 miles north of Memphis on U.S. 50, had been recently inspected, according to a follow-up study by the National Transportation Safety Board (NTSB).

Inspections have also occurred prior to several other recent major bridge mishaps. After the Hatchie River disaster, the NTSB ruled that state inspectors should have corrected problems they had identified 10 years before the disaster.

Richard Adorjan, spokesman for the Illinois Department of Transportation, says his state bridge system is "pretty good when you compare it nationally." Like New York's DePlasco, he is concerned about the debate in Congress over restructuring the federal government's Surface Transportation Act.

A U.S. Department of Transportation spokesman reports that administration transportation officials submitted an infrastructure funding reauthorization to Congress at the end of February. By the time hearings and Capitol Hill negotiations are expected to conclude late this summer, the official says, the shape of the new transportation funding policy for the near term will be more clearly defined.

"Like everyone else, we're concerned that changes in the funding structure could affect some of our key projects," says Illinois' Adorjan. Current federal funding arrangements for transportation expire in October.

"In the field of transportation, bridges are obviously looked at from a safety standpoint by a lot of people before roads are, and that's as it should be," Adorjan says.

Illinois, like many other states, has been forced to increase gasoline taxes to maintain its transportation infrastructure. A motor fuel tax passed there in 1989 increased the consumer tax by six cents a gallon. Illinois' total gasoline tax is now 19 cents per gallon.

Earthquake Menace

Because of its earthquake history, the state of California has an obvious interest in bridge safety.

George W. Housner, professor of civil engineering, California Institute of Technology in Pasadena, was appointed by the governor to head a panel investigating the impact of the Loma Prieta earthquake. This quake struck northern California in the fall of 1989.

Forty-two people were killed when the Cypress Viaduct portion of Interstate 880 failed. One died when part of the San Francisco-Oakland Bay Bridge collapsed.

Housner's study finds that bridges in California may need more stringent than the present design requirements. Bridge decks are much larger than typical building floors, the study says. Bridges also lack walls for support and have fewer vertical supports. Consequently, Housner says, bridges may need more earthquake protection than provided by the California codes that cover buildings.

In an average year, about 150 U.S. bridges collapse.

Report Criticizes Agencies

According to Housner's report, state and federal government agencies skimp on earthquake engineering research. He complains that, when the report came out in June 1990, earthquake research spending levels were less than half of what they were in the late 1970s.

"Nationally, it is pretty clear that a lot of bridges are old and either obsolete or defective in some way," Housner says. "Probably, only a minority of cities and counties really do a good inspection job."

Caltrans, his state's transportation agency, is responsible for many major road overpasses and interchanges. Caltrans had been slow to look at bridge earthquake safety before the Loma Prieta quake, which registered 7.1 on the Richter scale. Housner says the quake certainly "got their attention."

When and if the predicted magnitude 8.0 earthquake hits California, Housner now believes Caltrans will be ready. "I don't think the Caltrans bridges will pose a serious problem when the 'Big One' comes," he says, "but the city and county agencies find it difficult to do something about their bridges because of a lack of money."

Housner says the age of a bridge and its safety rating depends upon the kind of bridge in question and the kind of care the bridge has received. "Fifty years without care seems to be a reasonable time to become concerned." He was surprised to learn recently that many railroad bridges in California were built in the 1890s.

More People, More Risk

Housner recently attended a conference in Washington, D.C., organized by the Civil Engineering Research Foundation. One project group earmarked for more research is bridge maintenance. He says California's dramatic population increases over the past century make bridge safety all the more important to his state's drivers and safety professionals.

"You can't just build a bridge and forget about it," Housner warns. "As far as I know, there's no effort being made to make up for a need in funding. Nobody wants to pick up the check."

Many transportation experts and economists note the general inability or unwillingness of elected officials to "pick up the check" for necessary infrastructure — and not just on bridges. Better infrastructure often translates into improved business productivity, they say.

Dr. David Aschauer, a former senior economist with the Federal Reserve Bank of Chicago, is a government transportation consultant and professor of economics at Bates College, Lewiston, Maine. He says increased investment in infrastructure spending would dramatically boost U.S. productivity levels.

Profits and Infrastructure

"As a case study, you could look at a company like Federal Express," Aschauer says. "Clearly, its profits depend in large part on the rate of return on its own airplanes, trucks and processing facilities." According to Aschauer, the rate of return on such items is closely linked to the government's spending on infrastructure.

"When you look at our major international competition, you look at the Big Seven, which besides the United States includes Canada, France, Germany, Italy, Japan and the United Kingdom," Aschauer says. "In terms of net investment, we have devoted the smallest percentage of our gross domestic product (GDP) of any of these countries on infrastructure since 1965."

Japan invested 5.1 percent of its GDP on infrastructure and had a productivity growth rate of about 3 percent per year, Aschauer says. However, the United States invested about 1 percent of its GDP on infrastructure and saw approximately a 1 percent productivity rate of growth during the same period. He believes infrastructure and economic growth are clearly related.

Within the next several years, important U.S. infrastructure battles may be fought between President George Bush's budget managers and his Council of Economic Advisors. The outcome will have a direct effect on the millions of drivers and bus and train passengers who use America's ground transportation network every day.

In February, Aschauer met with White House advisors to discuss the president's positions on the Surface Transportation Act legislation pending in Congress.

While American voters await the final bill, experts say that the outcome of the legislation will tell how seriously elected officials will address the aging bridge problem.

If a remedy is not pursued soon, some warn that our government's inaction will lead America over a bridge too far.

They allow bridges to deteriorate sufficiently to qualify for federal funds.—Joe DePlasco

Trucking the Road to Safety

Wal-Mart's safe-driver programs exceed the expected.

SAM'S WAL-MART
MART

By Lisa Evans

For more than 22 years, Charles Williams enjoyed driving a rig for his company. Then he met a Wal-Mart driver who steered him in a different direction. Williams was so impressed with the driver's account of Wal-Mart's safety programs and working conditions that he jumped on the bandwagon and switched companies.

Now, after two years of driving for Wal-Mart Stores, Inc., the largest retail corporation in the United States, Williams says, "I've gained a lot of respect wearing a Wal-Mart uniform."

Attitude Makes a Difference

But what does respect have to do with safety? "Attitude is the biggest help or hindrance to safety," says Willie Screws, another driver for this general-merchandise discount company. He adds, "A happy driver is a safe driver."

Evidently, drivers for Wal-Mart are pretty happy. They average just one collision every 1,052,000 miles, says Joe Michael, the company's director of fleet safety. That figure compares to the national average of one to every 125,000 miles, according to the American Trucking Association in Washington, D.C.

For preventable collisions, those in which the driver could have made a better driving decision, Michael says, "Wal-Mart's average is 2,464,362 miles."

Safety has been a prime concern since the first Wal-Mart trucks

A tractor/trailer driver undertakes one of six obstacles to test his driving skill.

started hauling freight. Drivers pick up merchandise from 12 distribution centers for delivery to all Wal-Mart stores. "Once trucks leave the distribution center, our main concern is getting the freight to its destination safely," says John Hopfner, safety/personnel manager for the dispatch office in Douglas, Ga.

Drivers Screen Applicants

Safety begins with the hiring process. Management chooses and trains members of its Driver Screening Committee. Committee members are full-time drivers trained to look for a driver with experience and a safe-driving history.

The committee decides which applicants to interview. If, after an interview, the committee feels positive about an applicant, it recommends that management interview the person.

"We've found that drivers who screen other drivers are more particular when screening their own colleagues," Michael says. "They want someone as good as or better than they are." He believes the pride in being associated with someone they trust compels drivers to choose other drivers carefully.

"Not just anybody gets hired," Williams says. "You must have verifiable [job] experience. Wal-Mart has some of the highest standards around."

Formal Training

Safety continues with training. "Classroom training is the key to good defensive driving," Michael says. "Drivers must be schooled and shown how to perform better."

Wal-Mart began teaching the National Safety Council's 8-hour Defensive Driving Course (DDC-8) in 1979 and changed to the Professional Truck Driver course (PTD) when it was offered by the Council in 1986.

All training is conducted by safety/personnel managers at each of the 12 dispatch offices. Including Michael, all 13 instructors are certified by the National Safety Council. The instructors have a high level of safety backgrounds with some experience acquired working with state police departments.

Drivers joining the Wal-Mart fleet begin with classroom training before going on the road. "The basis is classroom training," Hopfner says. "But we extend it to the road [behind the wheel]." Once drivers are on the highway, safety/personnel managers conduct check-rides at random intervals. They ride along on a regular freight haul and critique the driver's performance.

"It keeps you on your toes," Screws says. "It's a kind of support rather than a threat. Management is consistently trying to help everybody do a better job."

Williams says he has never been corrected on a check-ride. Hopfner agrees and says that the process is positive. "You'll be sat down, told where you're coming up short, and then you'll be checked again."

Face-to-Face Reviews

Does training alone account for the low number of Wal-Mart collisions? Probably not. Another way the company works to improve safety is through its accident review system.

When a collision does occur, the dispatch safety/personnel manager goes to the accident scene, day or night.

"It's important to be there as soon as possible," Hopfner says, "to gather information." Taking care of the drivers is a big part of the job. If the truck is not driveable, the manager takes the driver home.

Wal-Mart investigates the collision to determine whether it could have been prevented. If the colli-

Joe Michael, director of fleet safety (left front), presents an award at a Wal-Mart championship driving contest.

Care for the drivers doesn't begin and end on the road.

sion wasn't preventable or the driver acted reasonably to prevent it, it's discussed with the driver, and no further action is taken.

"An accident is a total loss unless something can be learned from it. We want the outcome to be a learning experience," Hopfner says. "That way, the driver knows the options that could have prevented the accident."

Screws agrees that management's goal is "to educate drivers about how not to let an accident happen the next time."

A Wal-Mart driver always has the opportunity to have an accident reviewed by other driver associates. This process is called an accident review. The Accident Review Committee is composed of 12 full-time drivers (one from each dispatch office), who are selected by fellow driver associates. After a driver presents his or her version of how the accident occurred, the committee then classifies the accident as preventable or non-preventable.

It's a State of Mind

After being hired, trained and retrained, safety becomes a state of mind, Screws says. "Wal-Mart really stresses safety from the moment we enter the gate. In fact, there's a big sign with a safety slogan to catch our attention." Some slogans read "Make safety #1 in '91," "A second of time could save a lifetime," "Buckle up!" and "Lights on for safety." Wal-Mart truck drivers, by the way, drive with their lights on all the time.

At the Douglas office, Hopfner asks drivers for sign slogans and eventually uses all those submitted. The driver's name or CB handle is included on the sign. Slogans are also placed in a box for a drawing, and the author of the slogan drawn receives a free lunch.

Also contributing to the safety record at Wal-Mart, says Williams, "is that managers don't put demands on you." Drivers are given ample time to make their runs and aren't required to load or unload their trucks. Williams says the company's founder began those practices. "Mr. Sam [Walton] has the idea that a rested driver is a safe driver." Also, running late when the weather is bad or another hazardous condition exists is easily handled by a phone call.

Beyond the Road

Care for the drivers doesn't begin and end on the road. Screws says management listens to drivers. Some of the drivers, he says, go regularly to the company's headquarters in Bentonville, Ark., to have a voice in company procedures.

Two drivers from each dispatch office are chosen for the Drivers' Planning Committee. They travel to

Bentonville quarterly to talk about what's happening in the company and changes that can and will be made in the future. They discuss, for instance, the type of equipment Wal-Mart buys, including seats for cabs or improvements needed in the engines.

People from two Indiana companies that produce components of tractor-trailer rigs sat in on a recent Drivers' Planning Committee meeting and were impressed. They then invited one driver from each dispatch office to tour their facilities and to take part in brainstorming sessions. Hopfner says the companies took advantage of having feedback from end users for a change.

Safe-Driving Competitions

Each local Wal-Mart dispatch office also holds an annual Championship Driving Contest. It's an opportunity for collision-free drivers to test their skills as they are timed through an obstacle course. Each obstacle that participants face is a simulated, real-life driving situation. The simulations include: alleyways, backing into docks, side streets, left turns, diminishing clearance and crosswalks.

Local winners of each class then participate in their state's truck driver competition. State winners go on to the National Truck Driver Competition sponsored by the American Trucking Association. Last year, Michael says, Wal-Mart sent five drivers to the national competition in Dallas, and one Wal-Mart driver placed fourth.

Wal-Mart also sponsors its own Championship Driving Contest in Bentonville each year so that each dispatch office's winners can compete with one another.

Driving the Way They Feel

All dispatch-office practices and programs are done with the safety and welfare of the drivers in mind. "We have a very strong investment in our drivers. We want to make them as good as possible," Hopfner says. He believes that people drive the way they feel whether they feel angry and aggressive or contented and safe. By making drivers happy with their jobs, letting families be part of the training and letting drivers make decisions, Wal-Mart tips the balance in favor of safe drivers.

In addition to safety-oriented working conditions, Screws says the drivers are compensated with good salaries and share in the company's profits. Williams says that Wal-Mart is so family-like that "everybody just fits together."

Because the company is concerned with saving lives and preventing injuries, Michael says, Wal-Mart offers the National Safety Council's DDC-8 course to drivers' families from one to four times a year at dispatch locations.

"Several of our drivers had mentioned that their spouses and even their children would like to participate in driver training," Hopfner says. So much interest was expressed that one Saturday a sign-up sheet was posted, and a class of 20 to 25 people was immediately filled.

The turnover rate of Wal-Mart truck drivers is less than 1 percent. As soon as a dispatch office reaches full staffing, hiring stops, but drivers can relocate within the company. Hopfner says drivers' pride makes them stay with the company. "You see pride in our drivers. They're part owners of the company and treat the trucks as if they were their own."

Safe-Driver Incentives

Incentive bonuses go a long way toward the safety record, a Wal-Mart driver says. "Wal-Mart uses incentives to impress upon us how important we are." Safe drivers are recognized with belt buckles, lapel pins and safety certificates for the number of years they've driven without a collision. Annually, the company rewards safe drivers with cash bonuses.

At the Douglas, Ga. dispatch office, Safety/Personnel Manager John Hopfner initiated a monthly safety day. The break room is decorated with a carnival-type atmosphere, and hot dogs, donuts, ice cream and other foods are served throughout the day. The idea, Hopfner says, is to focus an extraordinary amount of attention on safety one day a month.

Further Wal-Mart driver incentives include a million-mile program. "When a dispatch office reaches the million-mile mark without a preventable collision, everybody in that office receives an award," says Joe Michael, the company's director of fleet safety. It's not just the drivers who receive awards, but also the shop workers and the office personnel because they all helped reach the goal." Awards include watches, rings and cameras.

Also for each million-mile mark, the company holds a 24-hour cookout for all associates at the dispatch office. Management cooks for 24 hours, Hopfner says, and everyone else just has fun.

More Pomp and Less Circumstance

Anti-drinking/driving project teaches teens to celebrate safely.

By Gabriel Shapiro

It's a breezy May evening in a small town in Maine. Parents of teenagers sleep soundly. The town's law enforcement officers have an uneventful night.

Yet at the local fairgrounds, there's an all-night teenage party going on. Recent high school graduates are dancing to a live band, playing pool and other games, and winning prizes donated by area businesses. There's no alcohol, and no one is driving.

Eleven years ago, the scene was different. Police and parents met in a hospital emergency room where mothers and fathers hurried to the sides of their children. Some painfully identified the lifeless bodies of their just-graduated teenagers.

The people of Maine were soon startled by some sobering mortality statistics: 18 teenagers had been lost to a single cause. These children had perished in alcohol-related automobile collisions during just the 1978 and 1979 high school graduation seasons.

The tears on mourners' faces were barely dry when they and other concerned people started working hard to prevent further tragedy. They decided that graduation was a time when celebrations should reign, not funerals.

In 1978, Maine's Department of Educational and Cultural Services' Division of Alcohol and Drug Education Services began a special program to help schools and communities address problems of alcohol and other drugs. One of the division's trained teams was the Drug and Alcohol Team of Oxford Hills (DATOH), which in 1980 zealously began promoting all-night, chemical-free graduation parties. The initiative came to be called Project Graduation.

Teen Lives Saved

Over the past decade, statistics have improved greatly. According to Maine's Division of Alcohol & Drug Education Services, not one Maine high school student died during the 1988 and 1989 prom/graduation seasons in alcohol-related collisions. Similar decreases are reported around the country, where Project Graduation has become active in all 50 states.

Mothers Against Drunk Driving (MADD) says that 2,775 teenagers (15 to 19 years old) were killed and approximately 100,000 were injured in alcohol-related collisions during 1989. According to the National Parent Teacher Association (PTA), about 44 percent of the 10th-graders it surveyed admitted they had ridden with a driver who was under the influence of alcohol or drugs.

National Highway Traffic Safety Administration (NHTSA) statistics show that drivers between 16 and 20 have twice as many fatal collisions per mile driven as older drivers. When alcohol is involved, the fatal collision rate of young drivers is three times greater than that of older drivers.

The Project Spreads

While independent groups and some high schools have held alcohol-free parties for more than 40 years, only in the past decade has there been a nationwide movement.

Maine's positive experience at cutting fatalities was soon communicated to other communities and high schools. MADD, the National PTA, Students Against Drunk Driving (SADD) and the National Highway Traffic Safety Administration all helped spread the word. Countless programs — all variations on the "celebrate sober" theme — have sprung up across the country.

An amazing number and diversity of people are joining in and networking on the projects: government agencies including law enforcement, organizations, businesses, professionals from all walks of life, and high school students and personnel.

Schools Large and Small

"Schools and communities of all sizes can benefit from Project Graduation and similar programs," says Jim Wright, youth coordinator for alcohol programs at the National Highway Traffic Safety Administration. Wright works directly with Project Graduation.

Fayetteville Senior High School, Fayetteville, Ark. (a university town with a population of approximately 40,000), has been singled out by many, including MADD and SADD, as having an exemplary program.

Libby Combs, teacher at Fayetteville High, says that Project Graduation caught on so well in 1987 that the school still hasn't lost its momentum. "We were the pilot school for Project Graduation in Arkansas. We were prepared to pursue the program at a Project Graduation Training Workshop in Missouri [sponsored by the Missouri Public Safety Department's Highway Safety Division]," says Combs.

"We were warned not to expect much of a turnout for our first nonalcoholic party," she says. "They said to be happy if we drew about 40 percent of the senior class. Believe it or not, we drew 78 percent."

That translates into 289 partygoers from the 1987 graduating class. It gets more impressive: Last year's party drew 415 students from the 1990 senior class. That's an amazing 97 percent turnout rate!

Combs says the class of 1990 and the faculty worked extremely hard to create a party that no high schooler would want to miss. "From the very first celebration, this wasn't just a little party, this was a major, major shindig with a Mardi Gras theme. Everyone was involved: the business community, the students and the faculty, and Wal-Mart [whose home office is in the area] donated the use of its incredible health and fitness complex.

Drivers between 16 and 20 have twice as many fatal collisions per mile driven as older drivers.

"We had a big dance, food, movies, a casino, and game-show-type activities with prizes. The party-goers also swam and played racquetball laser tag," says Combs. And, to top it all off, the Hilton Hotel chain's management company donated a prize trip to Padre Island, Tex.

"Basically, we want the students to think, 'Why would anyone want to miss the biggest party of the year, even if there is no alcohol?' "

"We want as many students as possible to come. This is no easy task when you're competing with traditions of going out and getting drunk," says Ron Mercier, a teacher at Milan High School in Milan, Mich. "In spite of all the challenges, it's working."

Last year's all-night Project

Graduation at the 700-student Milan school drew more people than the actual prom. "Part of the reason it's working is that we can give some important things to these kids, like love and support," says Mercier. "If we make it 'cool' to go, they'll listen. They'll come."

Students Must Be Involved

"A lot of work has to be put into a Project Graduation party because it has to match or maybe beat all the high-tech entertainment options available to youth," says Mercier.

Combs adds that "a great way to make students want to attend these events is to make them a vital part of the program — from planning educational events to choosing the party's theme."

Brody Walker, Fayetteville Senior High School Class of '90, is a case in point. "It gave me a strong feeling of accomplishment to help pull this off. I really wanted to be involved." Walker, who is now studying electrical engineering at the University of Arkansas, handled public relations and helped plan events for Fayetteville's Project Graduation.

Strangely enough, students often ask for pressure to attend these events. "It's ultra-important to have parental and peer pressure," says Walker. "If you aren't going to attend Project Graduation, a fellow student or your mother or father should bug you about it. They should ask you why you're not going."

Business/Celebrity Support

While many parts of the country are in a financial crunch, Combs says, "The first year, I couldn't believe it, but we received about $13,000 in donations (from the community). We're lucky so far to have at least that level of giving every year." Among Fayetteville-area contributors are the Campbell Soup Company, Superior Industry, Mexican Original Products, Levi Strauss and Co., Tyson Foods Inc. and all local grocery store chains and soft drink companies. Combs says, "A local pizza place gave us 100 pizzas. That's a large contribution for a small business! And the local TV and radio stations gave monumental support in the way of PSAs." Area tuxedo shops and florists insert notes — that discourage drinking and driving — in their tuxedos and corsages.

The National Basketball Association, The National Association of Broadcasters and NHSTA have teamed together to produce PSAs and posters featuring David Robinson, star center for the San Antonio Spurs. The PSAs will be aired nationally this spring, and the posters will be distributed to high schools.

Chicago's 1990 Project Graduation, in which nine schools participated, brought together the efforts of a Chicago Bears' football player, the mayor, Illinois' lieutenant governor and MADD members.

Prom parties should be only one of many anti-drinking and driving projects. — Jim Wright, NHTSA

In addition to businesses who chip in at the community level, there are companies which support a whole project. Nationwide Insurance of Columbus, Ohio, now supports 900 Prom Promise, high-school graduation projects in 21 markets. The program was developed originally by the Ohio Department of Highway Safety.

Like many anti-drinking programs, Prom Promise uses advertising and motivational in-school programs to encourage students to sign contracts, pledging not to drink or use drugs on prom night. The signing is witnessed by teachers and administrators, and each school submits a plan describing what it will do to back up student promises. Each school also develops a rap or song to help promote its efforts. The schools that accumulate the highest scores are awarded prizes for the students and cash awards for the school.

In the four participating areas in 1990, there were no alcohol-related deaths or serious injuries among teenagers during prom season. This compares with 56 killed or injured in those same areas the previous two years.

Creativity Eases Crunch

If funding is low, Combs and Mercier suggest that schools think creatively for ways to support their programs. "You can focus on what you have and play that up," says Mercier.

Van Nuys High School, a performing arts magnet school in the Los Angeles area, has taken the creative approach to heart. One of the school's premier anti-drunk driving events will be a dance production this May. Ed Garcia, director of the dance department at the 2,500-student school, says, "We focused on our strong points. One of them is definitely our creativity. Already, just developing this production has hammered home the negative aspects of drunk driving. . . and we haven't even performed it yet."

Jenifer Sforza, the 16-year-old student lead, adds, "It's not just the show itself. There's a lot of talk among the dancers about the problems of drunk driving. All the dancers belong to SADD."

The production depicts a student who goes insane after she causes the death of her boyfriend in a drunk-driving accident. Garcia says that the effects of this 40-minute presentation will spread outside the confines of the school. "We've made arrangements to present the piece to other high school groups, and we plan a tour."

Garcia also hopes that a famous alumna from the school — singer, dancer and choreographer Paula Abdul — will be able to return to her alma mater to help with this effort. "We're trying to get Paula to speak at graduation," he says.

Many schools hold fund-raising events such as class-faculty competitions, treasure hunts, talent shows, laugh-a-grams, disco contests and all-night bowling. Ideas are limited only to a school's imagination and initiative. The National Highway Traffic Safety Administration's free Project Graduation brochure, "Join the Celebration," provides a list of more than 275 fun ways to raise money.

Creativity is paying off for many

schools across the country. The National PTA and NHTSA, in their jointly sponsored annual Win with Project Graduation award competition, recognize high school PTAs for successful programs. The winners receive up to $2,000 to put toward the next year's activities.

First-place winner Highland High School PTA in Salt Lake City, Utah, had students shuttled by limousine to a nearby amusement facility for a night of dancing, skating and aerobic exercising. The school's success was attributed to outstanding student involvement, original and innovative ideas, and the compiling of student drug and alcohol usage statistics before and after the event.

Poplarville PTA in Poplarville, Miss., won second place for its first try, "A 1990 Class Act — Celebrate Sober." The graduates enjoyed a moonlight cruise on the Mississippi River, out of New Orleans. Third place went to Wake County PTA Council, Raleigh, N.C., for its project. More than 2,200 seniors filled a local stadium, where they danced to four live bands, played video games and were entertained by a psychic and jugglers. Party prizes included college scholarships, a trip for two to Paris, and a new car.

Beyond the Prom

Project Graduation and programs with the same goals have made impressive progress in focusing attention on the dangers of drinking and driving. However, most studies, including the landmark study of youth and drugs put out annually by the University of Michigan, say that alcohol use remains high among teenagers. Teen deaths and serious injuries continue.

While drinking and driving are eliminated from prom night, what about the next night or the night before? NHTSA's Wright says, "Project Graduation was first tried at a high risk time (graduation) to initially demonstrate that you can celebrate without alcohol." Now, Wright says, prom parties should be only one of many anti-drinking and driving projects.

MADD, SADD, the PTA, schools, students and other groups say they plan to expand and increase the scope of their programs. The 4-H Club has also become involved. To fill the gap, educational programs are carried out throughout the year in many schools.

Fayetteville's year-round approach includes in-school group discussions, the distribution of MADD and SADD literature and PSAs played by local radio stations.

Captain Chuck Rexford of the Washington County Sheriff's department, Fayetteville, Ark., says that all law enforcement departments in the area are involved in leading county-wide school seminars and workshops. Many students have had friends or relatives who've been killed or injured in accidents involving alcohol or other drugs, he says. "The biggest applause goes to the students. The student bodies and school clubs have made the biggest step through educational programs. They've grabbed the bull by the horns and run with it."

Anti-drinking assembly programs are also presented by local officials, businesses and teachers in Milan. And in many areas posters and billboards are sponsored by community businesses. For example, in Chicago, Patrick Media Group donated 11 billboards throughout the city to remind high school students and graduates to "Party Smart . . . Celebrate Sober!"

Recently, more than 500 PTAs have sponsored alcohol-free parties for homecomings, winter carnivals, proms and other major celebrations throughout the year. Marti Page, state administrator for MADD Illinois, says, "It's definitely a trend for (the schools) to start doing this year-round."

And the students are having fun. Says one enthusiastic participant, "We have to know that there's something out there that's really good, and it has nothing to do with alcohol."

Project Graduation Information and Publications

The National PTA, NHTSA, MADD and SADD all provide publications upon request to guide communities and schools in setting up anti-drinking/driving programs. The publications offer countless ideas on funding, promotion, party themes, educational ideas, and how to generate interest from students, teachers, parents and the community.

Prom Promise Program
Nationwide Insurance
One Nationwide Plaza
Columbus, OH 43216
1 (800) PROM-YES

The Celebrate Life Prom Campaign
National SADD Office
Contact: Bill Cullinane
(508) 481-3568

Operation Prom/Graduation How-To Guide
MADD
511 East John Carpenter
Freeway, Suite 700,
Irving, TX 75062
Contact: Fran Hurtadle
(214) 744-6233

Project Graduation — Join the Celebration
National Highway Traffic Safety
Administration
U.S. Department of
Transportation
Room 5130
400 Seventh St., S.W., NTS-2
Washington, DC 20590
Contact: Jim Wright,
(202) 366-2724

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Chicago, IL 60602

Washington World

More Dollars for Safety

Transportation Department offers bonus.

By Jim Castelli

The proposed Department of Transportation budget for Fiscal Year 1992 includes sharp increases in funding for safety programs and research.

The increases are a new "bonus" for state programs run jointly by the Federal Highway Administration (FHWA) and the National Highway Traffic Safety Administration (NHTSA), with a requirement that states spend 10 percent of federal transportation money on safety.

Most of the attention in Washington has centered on the Bush administration's proposed Surface Transportation Assistance Act, a five-year, $105 million reauthorization of the federal highway program. While the proposal would increase the federal support for highways, it would reduce the federal share of the cost of many projects. The states would pay the difference.

Congress and the states support much of the proposal. But there is considerable opposition to shifting the costs to the states. The final bill which emerges from Congress will probably have some major differences from the administration proposal.

Major sections of the proposal include:

- A greater emphasis on tolls and user fees to pay the costs of bridge and highway repairs.
- Giving states more flexibility in spending federal transportation funds.
- Establishing a new national highway system of 150,000 miles of road that will include the existing 43,000-mile interstate system and principal arterial routes that will be given high priority for construction and repair.

The federal government would pay 75 percent of the cost of repairing existing roads and building new roads in this system. The annual federal share would rise in each of the five years from $7.7 billion in 1992 to $11.2 billion in 1996.

- The only higher priority would go to complete the unbuilt 1 percent of the interstate system and to make critical repairs. Such projects would continue to be financed by the federal government on a 90 percent-10 percent basis.
- A lower priority would be given to 700,000 miles of important roads that would be grouped in an Urban and Rural Program. State governments would have to pay 40 percent of repairs and construction of such roads. Federal spending on this program would rise from $3.9 billion in 1992 to $5.7 billion in 1996.
- Unsafe and deteriorating bridges would also be targeted for repair or replacement. The bill seeks an increase in such spending from $1.8 billion in 1992 to $2.8 billion in 1996, with the federal share for such projects at 75 percent.
- Urban transit systems could no longer use federal money to subsidize their operating costs, and the percentage share of federal aid for capital costs would be reduced. This could lead to higher fares.

FHWA Encourages States

The major infusion of new safety funds would come from a provision that says when states receive FHWA funds for highways, bridges or urban-rural programs, they must devote 10 percent to provide safety benefits.

This program would replace $320 million in existing safety programs. But in FY 1992, the new program would require states to spend almost $1.4 billion of federal funds on safety. An FHWA official says that if Congress accepts this proposal, the agency will make it a requirement by FY 1996. The official said FHWA will have to draw up careful regulations defining "safety" features to insure that states use the funds for effective programs.

The joint NHTSA-FHWA Bonus program would include $25 million from NHTSA, $25 million from FHWA, $25 million from existing NHTSA alcohol programs and $5 million from FHWA urban-rural programs. This would create an $80 million fund in FY–1992 to encourage states to have effective safety programs by focusing on driver performance.

Don Bischoff, NHTSA acting associate administrator for plans and policy, says states can qualify for bonus funds during the first year if they meet one of three requirements:

- Alcohol programs that include a low Blood Alcohol Content standard and administrative per se revocation of licenses for drunk drivers.
- A seatbelt law.
- A traffic fatality rate that is either 10 percent below the national average or has declined by 10 percent in recent years.

The new budget includes $115 million for NHTSA's Section 402 formula safety grants to states. It also calls for $49.3 million for the

FHWA Motor Carrier Safety program, a 23 percent increase.

New Laws and Research

Much of the increase involves funding to implement three new laws passed in 1990: The Hazardous Materials Transportation Uniform Safety Act, the Motor Carrier Safety Act and the Sanitary Food Transportation Act.

Under the new budget, the FHWA Highway Safety Research and Development program would be merged with the Highway Research and Technology initiative for a combined budget of $104 million, a 111 percent increase over FY 91. Areas for research include traffic gridlock on urban freeways, such as computerized traveler information systems both in the vehicle and on the roadside and the application of artificial intelligence to traffic congestion problems.

Bischoff says NHTSA's research budget includes $1.5 million for a national driving simulator, the equivalent of computerized flight simulators. This system, he says, allows the "driver" to experiment under different circumstances to determine the impact on driving ability.

For example, he says that you can't measure the impact of different levels of alcohol consumption on driving because you can't put a drunk driver behind the wheel. With the simulator, however, it would be possible to measure the impact of different levels of alcohol on driver performance. The simulator would also make it possible to evaluate different crash avoidance techniques.

Trauma Systems Plan

Congress has passed the "Trauma Care Systems Planning and Development Act of 1990." The National Safety Council was one of more than 30 national health and safety organizations that supported the bill initiated by the American College of Surgeons.

In a letter urging President Bush to sign the bill, the organizations said "Injury, the nation's fourth leading cause of death, kills over 140,000 Americans each year. An estimated 25,000 of these people die each year, not from the severity of their injuries, but because they are not fortunate enough to live in communities that have organized their health-care resources to provide prompt access to the area hospital that is staffed and equipped to provide the special care they need. Tragically, the majority of these unnecessary deaths occur among the youth of America, robbing this nation of its most precious resource for the future."

Here is a summary of the bill's provisions:

- The Secretary of Health and Human Services will award grants to the states for developing, implementing and monitoring statewide trauma-system plans. To qualify, states must provide plans that take into account standards developed by the American College of Surgeons, American College of Emergency Physicians and the American Academy of Pediatrics. States must also identify rural areas that do not have 911 numbers, basic life-support services or advanced life-support services.

> **"An estimated 25,000 Americans die each year because they're not fortunate enough to have prompt access to hospitals that are staffed and equipped for special care."**

- Within a year, the secretary must develop a model trauma-system plan that takes into account the above standards.
- States with fully implemented trauma systems may use their grant funds to reimburse designated trauma centers for uncompensated trauma care services.
- The Secretary will establish an Advisory Council on Trauma Care Systems.
- The Secretary will contract for the establishment of a National Clearinghouse on Emergency Medical Services and Trauma Care to collect, compile and disseminate information and provide technical assistance to states and local agencies.
- The Secretary will make grants to public and private agencies for research and demonstration projects to improve the quality of emergency services in rural areas.
- The law authorizes spending of up to $60 million in fiscal year 1991 and "such sums as may be necessary" for FYs 1992 and 1993. States must match federal funds dollar for dollar in the second year and $3 to $1 in the third. Eighty percent of grants will be allocated on the basis of a state's population and the rest according to geographical size.

Traffic Fatality Rate Drops

Preliminary NHTSA figures indicate that there were 1,000 fewer highway deaths in 1990 than in 1989, according to U.S. Department of Transportation Secretary Samuel Skinner. "And the fatality rate should drop to 2.1 deaths per 100 million miles of travel — another record low," he says.

Skinner says NHTSA projected 44,500 highway deaths in 1990, compared to 45,555 in 1989, and the lowest figure since 1985, when there were 43,825 highway deaths. "The number is much below the 50,000-plus death totals recorded during many of the years between 1966 and 1980," he says.

"While the number of traffic deaths is still too high, the reduction in fatalities is still impressive because of an increase in the number of drivers and vehicles on the highways," says Skinner. "The downturn is due in large part to a generally heightened awareness of highway safety and federal and state programs to combat drunk driving and increase safety belt use."

NHTSA administrator Jerry Ralph Curry says alcohol-related deaths in 1990 are projected to be 11 percent below the benchmark year of 1982. He says safety belt use hit 49 percent in 1990 — up 11 percent from 1982. "We're poised to push the buckle-up rate over the 50 percent mark in 1991."

In addition, Curry projects that air bags will save 2,400 lives and prevent 29,000 moderate to serious injuries from 1990 through the end of 1995. Curry estimates that the portion of in-use passenger fleet with driver air bags will increase from 1.8 percent in 1990 to 18.3 percent in 1995 and that the portion with passenger-side air bags will increase from 0.2 percent in 1990 to 10.8 percent in 1995.

Away from Bars, Not Behind Them

Readers support sentencing drunks to A.A.

Judge Albert L. Kramer uses his power as presiding justice of the Quincy Division, Trial Court of Massachusetts, to force drunk drivers who are repeat offenders to attend Alcoholics Anonymous. All of the *Traffic Safety* readers who responded to our recent survey agreed this is a proper use of judicial authority.

"Judge Kramer is right on the target!!" writes one respondent.

"I think Kramer's methods are better than the normal procedure," says another, "but I would favor far more draconian measures, such as loss of license for one year for a first offense, with no 'work driving' license.

"I am in safety management, and I see nearly every employee who is arrested for DUI maintain his driving privileges. It is far too rare when a DUI's driving privilege is completely revoked."

The heart of the Kramer system is to use the threat of jail, not to punish, but to require drivers with an alcohol problem to obtain help. The court encouraged the establishment of a private treatment system, which costs the offender $400 a week.

Comment from reader: "The program is unique in that it offers a cure as well as a deterrent. I hope a payment plan to cover the $400 a week fee would be allowed to prevent additional mental stress to the recovering alcoholic."

Qualms

Some respondents who otherwise support Judge Kramer's approach fear that it might detract from the progress that has been made in changing the drinking habits of all drivers. "Education programs should continue for all drivers convicted of DWI," writes the mayor of a southeastern city.

A police officer disagrees with the premise that hard-core drunk drivers are more dangerous overall than the large number of social drinkers. Comment: "Any driver under the influence of alcohol or drugs is dangerous. . .Jail, alternative sentencing, required A.A. attendance are necessary components of treatment/sentencing."

And from James J. Baxter, president of the National Motorists Association (NMA), "It distresses me to no small degree that fear, intimidation and revenge have become accepted and approved as legitimate tactics to discourage drinking and driving.

"Juxtaposing the article on Judge Kramer's refined and balanced program of punishment and treatment with the comments supporting police road blocks heightens the dichotomy between those interested in preserving their crusade against Demon Rum and drinking in general.

"Judge Kramer's understanding of the problem, his system of enforced treatment and his focus on solutions were refreshing antidotes to the hyperbole and demagoguery normally associated with this subject."

A Nebraska reader writes, "Being an addict myself, I know how hard it is to admit you that are and do something about it. This program should help many alcoholics. Even if it only helps a few, that is a miracle!

"If a social drinker gets caught in the program, I do not think it would harm that person. If anything, the individual would become more informed."

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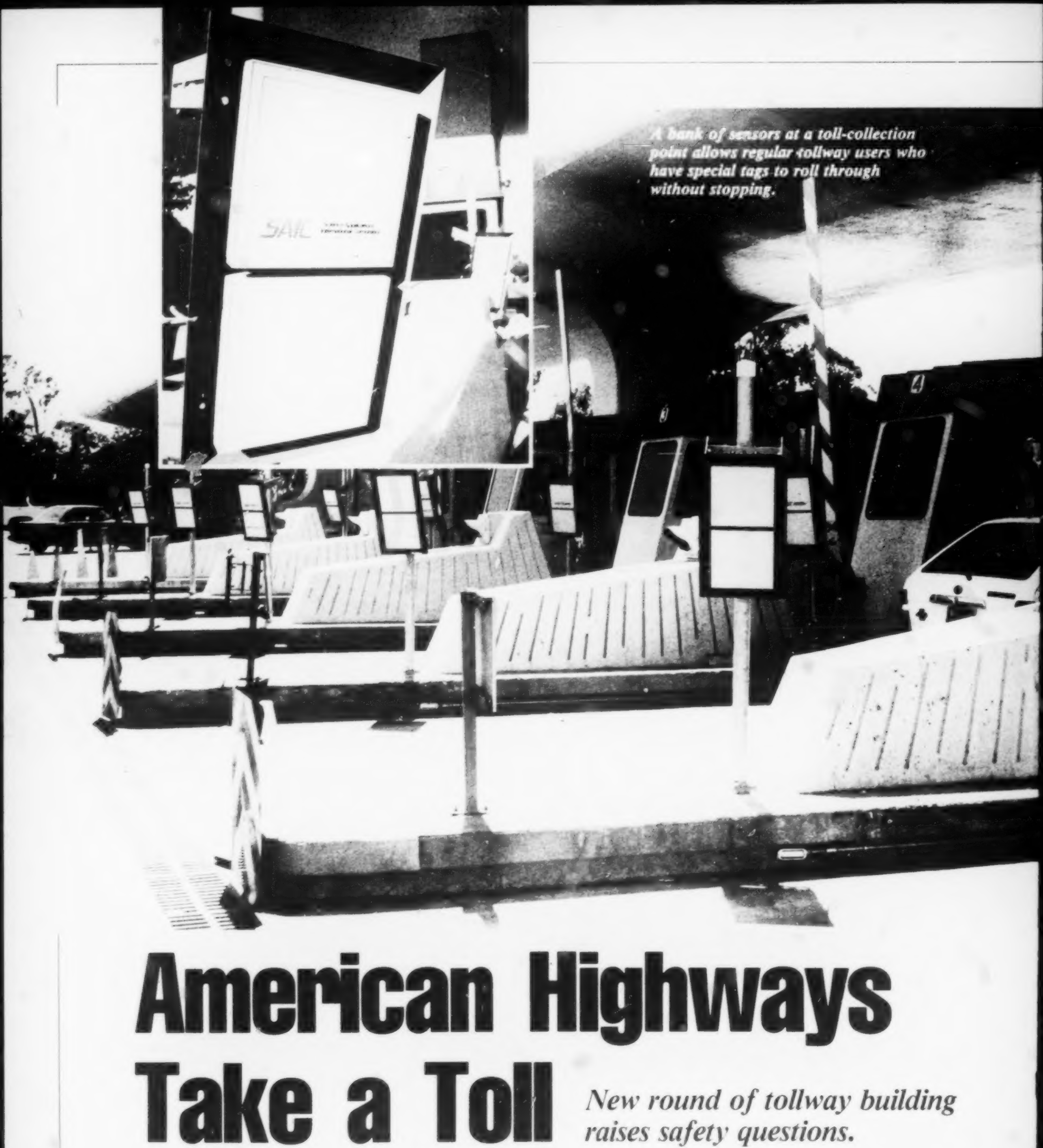

A bank of sensors at a toll-collection point allows regular tollway users who have special tags to roll through without stopping.

American Highways Take a Toll

New round of tollway building raises safety questions.

By Thomas Frisbie

When seven people were killed in a 1983 collision at the Connecticut Turnpike's Stratford toll plaza, local attention focused on the hazards of toll booths.

Area residents and legislators were shocked by the news: A tractor-trailer truck had smashed into four cars at the toll plaza and had engulfed the truck and three cars in flames. Convinced that toll barriers contribute to accidents, congestion and pollution, the residents and legislators campaigned to remove the turnpike's eight toll plazas.

"The folks who died were just sitting ducks," recalls Thomas Scott, former Connecticut state senator who led the campaign. "They couldn't have moved even if, God forbid, they saw the truck bearing down on them in the rearview mirror."

The campaign against tolls was a success. Connecticut removed toll booths on the turnpike, two parkways and three Hartford-area bridges. In doing so, state officials chose to forgo nearly $66 million in annual revenues.

"Basically, in Connecticut the toll booths acted as an unnatural barrier in the middle of a superhighway. The approaches to many were unsafe, particularly at the speed at which people were traveling," Scott says. "Also merging, particularly last-minute merging, led to a lot of accidents, many of them minor but some very serious."

Toll-Free State

Today, Connecticut is a toll-free state. It is also a state that is going against the traffic flow. Around the country, enthusiasm for tollways has revived, creating a boom in tollway construction and planning.

Supporters tout the benefits of tolls: They act as "user fees" and ease budgetary pressures on cash-strapped governments. Little study has been done, however, on how a rapid increase in new toll barriers may add to highway collisions.

Toll-supported roads and bridges have a long history. In colonial times, private toll roads were common. And tolls have been charged on bridges for years. In the 1940s, '50s and '60s, there was a surge of toll-road construction, particularly in the Northeast.

The federal interstate program created in 1956 dampened enthusiasm for toll roads. By the late 1970s, toll booths had gone out of fashion on superhighways. Only a handful of new tollways opened in the early 1980s.

New Policy

That's changing. Last year, President Bush announced a new transportation policy that includes a call for more toll roads. On Feb. 13, U.S. Transportation Secretary Samuel K. Skinner released a $105 billion proposed transportation program. It also envisions the use of tolls to help pay for some roads and bridges.

In January, the Highway Users Federation reported that new toll road projects are under way in 21 states. The International Bridge, Tunnel and Turnpike Association (IBTTA) counts 48 new toll projects that will add 1,372 miles to the 4,600 miles of U.S. toll facilities. Combined, the projects' estimated cost is $13.4 billion.

"In the late 1970s and early 1980s, there was hardly any building of toll facilities," says Maureen Gallagher, IBTTA director of research and member services.

Now there is a new interest in tollways, Gallagher says. "I think states are stuck for money, and I think that has a lot to do with it."

In Illinois, for example, officials in Du Page County tried in vain for two decades to get a north-south superhighway built in the fast-growing suburban area west of Chicago. It was not until they pushed for a tollway that they succeeded. The 17.4-mile, $490 million North-South Tollway opened on Christmas Eve 1989.

Any time you ask people to change lanes or stop, it is going to cause more accidents.—Thefor Williams

Pilot Program

Also encouraging toll road construction is a federal pilot program enacted in 1987. It allows for the first time a new road to be financed both by federal aid and toll revenues. Federal aid can be used for up to 35 percent of the road's cost. The Bush administration has recommended opening up the pilot program to all states.

Test of Privatization

Projects recently opened, under construction or in planning stages, around the nation include: a bridge linking Fargo, N.D., and Moorhead, Minn., that opened in June 1988; a section of a business beltway to eventually encircle Denver; two tollways completed in July 1990 in Harris County, Tex.; and three toll roads totaling 65 miles planned for Orange County, Calif.

The Orange County roads would be private joint ventures coordinated by the state. California has enacted a law that permits construction of private toll roads.

One proposed project that has attracted attention is a privately funded road in Virginia, sponsored by the new Toll Road Corporation of Virginia. The new 14-mile, $146 million road would extend the publicly run Dulles Toll Road. This road links the Capital Beltway to Dulles International Airport, near Washington, D.C. The endeavor is seen by some as a key test of the concept of privately built toll roads.

Debate, sometimes heated, has raged over the financing concepts of new toll roads. Much less attention, however, has focused on the safety risks of more toll-collection barriers.

According to Dr. Paul H. Wright, civil engineer and professor at Georgia Tech School of Civil Engineering, "Toll facilities represent a small percentage of the total mileage on highways. That automatically makes them a relatively small part of the overall traffic safety picture. I don't think a lot of research has been done [on toll booths]."

Experiences Vary

Most toll plazas are well-designed with wide approaches, good lighting and high visibility. Most drivers should have little trouble navigating them, Wright says.

"I think any time you stop a high-speed traffic stream, you can anticipate some elevation in the hazard involved," Wright says. "If a driver is impaired in some way, any stop in a high-speed traffic stream presents some sort of hazard. Beyond that, I don't really view (toll barriers as) a big problem from a traffic safety standpoint."

Neil D. Schuster, IBTTA's executive director, says he also does not believe toll collection is a significant safety issue.

"Every agency is very safety oriented and has its own safety program," says Schuster. In 1989, a total of 43,384 accidents and 313 fatalities occurred on the nation's tollways, according to statistics compiled by IBTTA.

The Illinois State Toll Highway Authority is an example of a safely operated system, says Susan Rader, public relations staff coordinator for the authority.

"In 30 years, we have had only one toll attendant killed (walking between toll booths) in the line of duty. . . . We have one of the safest tollways in the nation," says Rader.

Illinois' tollway system collects tolls from motorists at plazas and at some entrance and exit ramps. The entrance and exit toll is estimated to be used on approximately half the systems of the nation's 65 toll-collecting agencies.

Most other tollway agencies use ticket systems: A motorist obtains a ticket upon entrance and pays at the exit. Ticket systems have the advantage of restricting toll barriers to entrance and exit ramps. They are more common on older tollway systems, Gallagher says. She indicates the trend is toward cash-toll collection. The Indiana Toll Road, for example, converted from ticket to cash-toll collection in the late 1980s.

Toll Booth Collisions

Little research has been done to evaluate the impact of toll barriers on highway safety. However, analyses indicate that the barriers do contribute to traffic accidents.

Automatic vehicle identification (AVI) systems could eliminate the need for toll barriers.

Connecticut's state statistics show that 8 percent of all accidents occurred at toll barriers. A separate study of accident statistics on the Garden State Parkway in New Jersey also finds that accidents are more likely to happen in the vicinity of toll booths.

"The difference in the rate seems significant," says Trefor Williams, assistant professor of civil engineering, Rutgers University, who conducted the New Jersey study.

The 1982-87 accident statistics on 125 miles of the 173-mile Garden State Parkway, which prohibits trucks, were analyzed. The analysis shows that the accident rate was 103.13 per hundred million vehicle miles near the parkway's 11 toll barriers.

This compares with a rate of 79.24 away from the toll booths. Accidents with injuries were 38.13 per hundred million vehicle miles near toll booths. Elsewhere on the parkway, the rate was 31.70, says Williams.

Based on these rates, Williams estimates there would have been 171 fewer injuries and 468 fewer collisions with property damage had there been no parkway toll barriers during the period studied. The findings, combined with issues of congestion, pollution and energy conservation, convince Williams that new toll facilities are *not* the best way to meet the nation's transportation needs.

"I was taught in traffic engineering that any time you ask people to change lanes or stop, it causes more accidents than on a normal stretch of highway," says Williams.

Unnecessary Hazard

John Reith, director of highway policy for the American Trucking Association, says his organization believes that toll roads — even those that collect tolls through a ticket system on entrance and exit ramps — create an unnecessary hazard.

"People run into ticket booths or barriers on a fairly regular basis. This issue has concerned the industry," says Reith. "There have been some very serious accidents.

"There definitely is a movement toward more toll roads, particularly in congested urban areas. That is where federal and state highway departments are primarily talking about building them." The safety issue, Reith says, will become increasingly significant as more toll roads are constructed.

The center of attention, however, is more likely to be the money federal and state governments can save by renewing an emphasis on tollways, says Reith.

"The fact is that the feds have not increased federal aid available for highways and states. States are feeling substantial pressure on their funds. . . . I think it is a money deal all the way around," says Reith. "Of course, you also have the support of the manufacturers of toll equipment, the bond houses and organizations that promote bonding in the states and so on."

Robobooth

A technological development that may eliminate the need for toll bar-

Photos courtesy of Caltrans

This California driver's reflective windshield tag speeds up his toll booth time.

riers is automatic vehicle identification (AVI) systems. In theory, roadside systems with AVI could collect tolls automatically via electronic chips or other devices mounted on passing vehicles.

AVI systems (or "electronic toll and traffic management systems," as the IBTTA calls them) someday could make the toll booth "a danger point that could be eliminated," according to Francis "Frank" B. Francois, executive director of the American Association of State Highway and Transportation Officials.

The first AVI toll road system in the United States went into operation July 30, 1989, on the 15-mile North Tollway in Dallas. Approximately 30 percent of the vehicles on this commuter route are equipped with cassette-tape-sized tags inside their windshields.

The tags interact with an electronic "reader" at each toll booth via a low radio frequency. One lane is for tag-equipped cars. Instead of stopping, they can cruise through at 10 m.p.h.

AVI technology also is being studied or implemented by the Louisiana Department of Transportation, the Port Authority of New York and New Jersey, the Oklahoma Turnpike Authority and other agencies, says Gallagher.

The California Transportation Department (Caltrans) is experimenting with its own AVI designs.

Charge It

Caltrans first tried a system on the San Diego-Coronado Bridge. Sensors interacted with reflective tags on the windshields of 100 test vehicles, says George Hartwell, a Caltrans public information officer. The vehicle owners could have Caltrans deduct tolls from a prepaid account; send a bill periodically; or charge tolls directly to Visa or MasterCard accounts.

Although the test system proved sufficiently reliable, engineers believe a redesigned system will work better. The California legislature has ordered the development of generic AVI specifications that could be used on tollway systems throughout the state. A draft of those specifications now awaits industry comments.

"Technology being studied at the moment involves a radio frequency," Hartwell says. "The AVI tag, placed on the driver's window or elsewhere on the vehicle, would be battery-powered. It is believed this will provide the degree of reliability needed."

The General Accounting Office recently released a report that says the AVI concept should be encouraged throughout the nation by requiring states to analyze whether it would be beneficial.

Numerous Hurdles

Hartwell says numerous hurdles must be overcome before toll barriers become just another set of historic sites that are paved over and forgotten.

"It is impractical to think that everyone will have a device on their vehicles. Out-of-state cars won't have this system. Maybe when such systems become commonplace throughout the country (barriers will be eliminated), but at this point, it is futuristic technology."

Former Connecticut state senator Scott is convinced that keeping toll barriers is a mistake.

Scott says that governments on all levels should find ways to eliminate toll roads and not urge the construction of new ones.

"I think people do bizarre things they might not ordinarily do to save a second or two in toll booth lines — crossing lanes at the last second and so forth," says Scott. "I think the secretary of transportation and others who are interested in this scheme should visit Connecticut and talk to commuters here."

SURVEY

Should the Turnpike Movement Be Turned Back?

Safety questions raised about toll booths

The new federal transportation policy encourages "user fees" to pay for new roads and bridges. As an article in this issue points out, toll booths are coming back into vogue.

This raises questions of traffic safety as well as tax policy. If more collected tolls pay to upgrade roads and bridges so that they meet higher safety standards, that's a benefit. On the other hand, evidence is emerging that toll collection sites instigate collisions that otherwise might not occur.

Is the swing back to toll roads really a good idea? What do you think?

After answering the questions, you can tear out this page and send it in. Or if you share your copy of *Traffic Safety* with others, you may want to photocopy the page. Then, if you choose, you can write additional comments on the back.

We'll publish the results in a future issue. Mail your responses to:

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Chicago, IL 60611

	Yes	No	Undecided
1. Do you think collection booths on existing toll roads are a safety hazard?			
2. Do you think the condition of road and bridges in your area is bad enough to warrant building new toll systems even if that in itself could cause some collisions?			
3. To get new roads without new toll booths, would you be willing to pay a higher gasoline tax (which would preserve the concept that users should pay)?			
4. As a traffic-safety professional, are you personally aware of collisions in which the existence of a toll booth was a significant contributing factor?			
Comments:			

Council's New Fleet Section Fills Need

Responses run high for fleet-administrator concerns.

By Daniel Jones

Current safety concerns have surfaced in the nation's government and industry as a result of alarming statistics. Thirty-seven percent of the work-related deaths (3,848 employees) in the United States involved motor vehicles — the largest, single category for work-related deaths, according to the National Safety Council's publication, *Accident Facts*, 1990 Edition.

To address these concerns and future regulations that affect fleet management and safety, the Council's Board of Directors recently approved a Fleet Administrator Section. This new section is an addition to the Council's Motor Transportation Division.

Specifically, the section will provide safety and regulatory assistance to fleet-administrative personnel responsible for managing cars, vans, and/or light duty trucks driven by sales representatives and other administrative personnel.

The Fleet Administrator Section was developed for fleet administrator/managers, safety managers, risk managers, loss control managers, or other administrators responsible for administering these types of vehicle fleets.

"From an initial newsletter insert sent to current Council member organizations, we have received over 580 responses," says Lester Sokolowski, director, Motor Transportation Department, National Safety Council. "These are professionals who are interested in becoming a part of this new section. This new membership opportunity will receive its first national promotion this spring and summer."

The first meeting of the Fleet Administrator Section was held October 28, 1990, during the National Safety Council Congress and Exposition in Las Vegas, Nevada. Bylaws were established, along with section goals and objectives. First-year officers for the 1990-1991 year were also elected:

General Chairperson:
 Ms. Penny Levin
 President
 PAL Productions, Inc.
 Highland Park, Ill.
1st Vice Chairperson:
 Cameron H. Speck
 Safety/Human Resource Consultant
 Stark Technical College
 Massillon, Ohio
2nd Vice Chairperson:
 George M. Moutrie
 Manager of Safety and Security
 Northern Plains Natural Gas
 Omaha, Neb.
Secretary:
 Julie A. Love
 Fleet Operations Manager
 Millar Elevator Services
 Toledo, Ohio

The enthusiastic response of meeting attendees is reflected in the following comments:

"For companies with large or small fleets, this section will provide a myriad of information regarding laws and safety concerns that face today's fleet administrators.

"Methods for accessing the risks involved with operating a fleet will be of prime concern. Information regarding liability issues and reducing accidents will be available for those who take advantage of using this new section as well as learning how to do proper accident investigation.

"Those who join us in this new section of the Council will like what they see," says *Ed Brady, Corporate Safety Manager, Furr's Inc., Lubbock, Tex.*

"From a fleet manager's perspective, the Fleet Administrator Section will be an integral part in educating fleet managers in all safety-related issues.

"This section will give the novice or seasoned professional a place to look for advice and guidance on establishing fleet-safety programs, reducing/preventing accidents and budgeting costs for safety programs," notes *Julie Love, fleet operations manager, Millar Elevator Service Co., Toledo, Ohio.*

She continues, "This section will also provide regulatory information to keep the fleet professional informed of what is going on in the industry. Also, the discussion groups that will be available (specified to one's industry) will be a valuable educational tool to enhance one's professional knowledge.

"As a fleet professional, I am looking forward to this new section and only wish it had been established when I first started in this profession," concludes Love.

Ms. Monica Turk, senior risk analyst, Progressive Insurance, Beechwood, Ohio, comments, "I am very excited about the new Fleet Administrator Section. I also look forward to working with a group of people from various industries and with diverse backgrounds who all have the same goal of making fleet safety a priority."

A second meeting was held in San Francisco, March 18-20. All interested professionals are encouraged to attend the third meeting to be held in October 1991 at the National Safety Council's Congress in New Orleans.

For additional information, contact Daniel Jones, program manager, Motor Transportation Department, National Safety Council, (312)-527-4800, ext. 8425.

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NEW PRODUCTS

Government Offers Gas Guide

CONSUMER INFORMATION

Gas-conserving guidelines for motorists are offered by the Department of Energy and the Consumer Information Center of the U.S. General Services Administration. The federal agencies also warn consumers to beware of devices and gasoline additives advertised as "mileage boosters." None of these products has been found to significantly increase fuel economy, they said.

The federal government's "Consumer Information Catalog," which lists over 200 free and low-cost consumer publications, is available at no cost by writing to the distributor. Topics covered in the listed publications include cars, the home, health, education, and federal programs. — **Free Catalog**, Pueblo, CO 81009.

VEHICLE INTERCOM

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HIGHWAY FACTS

The *1991 Highway Fact Book*, published annually by the Highway Users Federation, documents highway transportation and traffic safety facts in an easy-to-use reference guide. The book is divided into 28 categories, including travel trends, highway funding and expenditures, and highway infrastructure. The book's facts include:

- Americans are driving 187 million motor vehicles 2.1 trillion miles a year, a 193 percent increase since 1960.
- U.S. expenditures for auto and truck transportation in 1989 totaled $757.6 billion, 14.5 percent of the gross national product.
- Federal, state and local governments collected $72.7 billion in highway revenues in 1989.

—**Highway Users Federation**, 1776 Massachusetts Ave. N.W., Washington, DC 20036.

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The National Accident Fatality Toll

	1990	1989	Change
All Accidents	~~93,500~~	95,500	−2%
Motor-vehicle	46,600	47,100	−1%
Public nonmotor-vehicle	19,000	18,700	+2%
Home	21,300	22,800	−7%
Work	10,700	10,700	0%

Note: The motor-vehicle totals include some deaths also included in work and home. The duplication amounted to about 4,100 in 1990 and 3,900 in 1989. All figures are National Safety Council estimates.

This "National Accident Fatality Toll" for 1990 precedes publication of *Accident Facts* (1991 Edition)—a detailed analysis of all accidents occurring during 1990 (work, motor-vehicle, public, home, farm and occupational and environmental health). These estimates are preliminary and may differ from 1990 estimates published later this year in *Accident Facts.*

All Accidents

Deaths—93,500, down 2,000 from 1989.
Injuries—8.9 million.
Death rate—37.5 per 100,000 population, down three percent from 1989.
Cost—$156.9 billion. Includes wage loss, medical expense, administrative and claim settlement cost of insurance for all accidents, certain "indirect" costs of work accidents, and property damage in traffic accidents and fires.

Age groups that showed decreases in deaths from 1989 were: 0-4, down eight percent; 5-14, down seven percent; 15-24 and 25-44, each down two percent; 45 to 64, down three percent. Deaths were unchanged for 65 to 74 year olds, and up one percent for those aged 75 and over.

Deaths associated with drownings were up in 1990, while deaths from poisoning by solids and liquids, firearms, falls and fires were down.

Work Accidents

Deaths—10,700, no change from 1989.
Injuries—1.8 million.
Death rate—9 per 100,000 workers, no change from 1989.
Cost—$52.6 billion. Includes certain "indirect" costs of work accidents, as well as wage loss, medical expense and administrative and claim settlement costs of insurance, and loss from business fires. Not included is the value of indirect losses of all fires and property damage in noninjury accidents other than fires.

Time lost amounted to about 36 million worker-days, equivalent to the shut-down of plants with a total of about 144,000 workers for one year.

Total employment was up one percent and average hours worked per week remained the same.

Worker Accidents

Deaths—47,700, down 500 from 1989. On-the-job deaths totaled 10,700; off-the-job deaths totaled 37,000.
Injuries—4.6 million.

Home Accidents

Deaths—21,300, down 1,500 from 1989.
Injuries—3.2 million.
Death rate—8.5 per 100,000 persons, down eight percent.
Cost—$18.6 billion.

More than one-third of those killed were persons 75 years old and older. Persons 25 to 44 years made up about one-fourth. Children under five made up less than one-tenth. The remaining one-third were persons 5 to 24 and 45 to 74. Falls caused almost one-third of the deaths and solid and liquid poisoning, almost one-fourth. All other types including fires contributed about one-half of the total.

Public Accidents

(Nonmotor-Vehicle)
Deaths—19,000, up 300 from 1989.
Injuries—2.4 million.
Death rate—7.6 per 100,000 population, no change from 1989.
Cost—$13.4 billion.

Deaths were distributed by age as follows: 75 and older, about one-third; 25 to 44 about one-fourth; 45 to 64 about one-fifth; 65 to 74 about one-tenth; and those under 25 about one-fifth. Falls resulted in almost one-fourth of the deaths, while drownings resulted in about one-fifth. Transportation accidents (water, air, etc.) accounted for more than one-tenth. All other types contributed about one-half of the death total.

EVENTS

MAY

DDC-8 — May 6-8, Chicago — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611. (312) 527-4800, extension 8407.

Principles of Fleet Administration Safety — May 6-8, Chicago — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611. (312) 527-4800, extension 8425.

Advanced Transportation Management — May 6-17, Evanston, Ill. — The Transportation Center, Northwestern University, 1936 Sheridan Rd., Evanston, IL 60208-4040. (708) 491-3225.

DDC-4 — May 9-10, Chicago — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611. (312) 527-4800, extension 8407.

Lifesavers/9, National Conference on Highway Safety Priorities — May 12-15, Charlotte, N.C. — Lifesavers Conference, Inc., 919 18th St., N.W., Suite 1001, Washington, D.C. 20006. (202) 857-0002 or 1-800-388-2224.

DDC-ADD (Attitudinal Dynamics of Driving) — May 13-15, Chicago — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611-3991. (312) 527-4800, extension 8407.

Internal Affairs, Disciplinary Procedures and Ethics (annual Southwestern Law Enforcement Institute program) — May 13-17, Dallas — Registrar, The Southwestern Legal Foundation, P.O. Box 830707, Richardson, TX 75083-0707. (214) 690-2376.

Designing Efficient Major Urban Streets — May 20-21, Boston — Continuing Education, Georgia Institute of Technology, Atlanta, GA 30332-0385. (404) 894-2547.

JUNE

Motor Fleet Accident Investigation Workshop — June 3-4, Chicago — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611. (312) 527-4800, extension 8425.

Basic Motorcycle Operation Training — June 3-7, Milwaukee, Wis. — The Northwestern University Traffic Institute, 405 Church St., Evanston, IL 60208. (708) 491-5476 or 1-800-323-4011.

Pedestrian Safety Conference (emphasis on coordinating engineering, education and enforcement). — June 10-12, Knoxville, Tenn. — Dr. John E. Tidwell, P.E., conference coordinator, Transportation Center, The University of Tennessee, 340 South Stadium Hall, Knoxville, TN 37996-0700. (615) 974-5255.

Analysis and Evaluation of Traffic Safety Problems — June 13-14, San Diego — Institute of Transportation Studies Extension Programs, Richmond Field Station, University of California, 1301 S. 46th St., Bldg. 452, Richmond, CA 94804. (415) 231-9590.

DDC-4 — June 18-19, San Francisco, Calif. — Western Region Office, National Safety Council, 1111 Triton Dr., Suite 201, Foster City, CA 94404. 1-800-848-5588.

DDC-PTD — June 25-26, San Francisco, Calif. — Western Region Office, National Safety Council, 1111 Triton Dr., Ste. 201, Foster City, CA 94404. 1-800-848-5588.

JULY

Vehicular Homicide/DWI Conference — July 7-11, Evanston, Ill. — The Northwestern University Traffic Institute, 405 Church St., Evanston, IL 60208. (708) 491-5476 or 1-800-323-4011.

AUGUST

DDC-8 — Aug. 5-7, Chicago, Aug. 15-16, San Francisco — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611-3991. (312) 527-4800, extension 8407; Western Region Office, National Safety Council, 1111 Triton Dr., Ste. 201, Foster City, CA 94404. 1-800-848-5588.

DDC-4 — Aug. 8-9, Chicago, San Francisco — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611-3991. (312) 527-4800, extension 8407. Western Region Office, National Safety Council, 1111 Triton Dr., Ste. 201, Foster City, CA 94404. 1-800-848-5588.

Illuminating Engineering Society of North America (IESNA) 85th Annual Conference — Aug. 11-15, Montreal — Includes sessions on roadway lighting, visibility and vision. Valerie Landers, 345 E. 47th St., New York, NY 10017. (212) 705-7269.

DDC-ADD (Attitudinal Dimensions of Driving) — Aug. 14-16, Chicago — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611-3991. (312) 527-4800, extension 8407.

DDC-PTD (Professional Truck Driver) — Aug. 26-28, Chicago — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611-3991. (312) 527-4800, extension 8407.

DDC-CTMD (Coaching the Mature Driver) — Aug. 29-30, Chicago — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611-3991. (312) 527-4800, extension 8407. ●

TWO-WAY STREET

Driver Training for the Blind?

I am prompted by a *Traffic Safety* article to comment on OSHA's proposal on driver safety training and the use of safety belts.

I believe the current proposal is an unfounded exaggeration of an otherwise necessary move. It should be severely revised to regain its productive focus.

This rule is the result of a plea from the National Safety Council that OSHA should address the high percentage of occupational fatalities that result from vehicle collisions. However, the proposal is a wide swipe at a variety of needs and is reaching into *any* motion/transport activity using the prompt of "vehicle accidents." This weakens the rule's standing and burdens employers to go through certain motions which might or might not affect the subject.

By using the definition of vehicle as "any vehicle . . . propelled or drawn by mechanical power in the transport of employees. . .," the rule involves vehicles that are not a part of the problem. I point to golf-car-type vehicles or mobile cranes that are used within a plant. There are probably other examples.

OSHA also proposes that the rule apply to *all* employees who might operate *or occupy* motor vehicles. This can require driver training for blind or physically handicapped employees who can't drive.

The proposed requirement for new employees to demonstrate *equivalent* training within three years or not be allowed to drive is excessive and almost abusive. A valid driver's license and a records check should be enough for hiring. The required training can be had at the next scheduled session.

Any Comments?

"Two-Way Street" is *your* forum; a place for ideas and opinions on issues important to traffic safety professionals as well as comments about articles in previous issues of *TRAFFIC SAFETY*.

Please address letters to "Two-Way Street," *TRAFFIC SAFETY* Magazine, 444 N. Michigan Ave., Chicago, IL 60611.

Letters may be edited for clarity or because of space.

There should be no mention of employers retrofitting safety belts. Installation and testing of safety belts belongs to a vehicle manufacturer. An employer can't do that.

The rule should not set a length of time for training sessions. It would be reasonable to describe the material to be covered and drop the time requirement. The high level of qualification for driver-safety instructors will result in almost every covered employer having a driver-training specialist.

I strongly support a good vehicle safety standard, but I oppose the exaggerated and unnecessarily complex present proposal.

John Fossett, C.I.H., C.S.P.
Safety Manager
Sandoz Crop Protection Corporation
Des Plaines, Illinois

Sound, Lights and Wipers

Maybe one of the *Traffic Safety* readers can answer these questions.

Many automobile manufacturers claim that state of the art sound systems included in their vehicles provide symphony hall quality. What happens when you are driving along in your personalized symphony hall, front-row center, and an emergency vehicle comes along? Will you be able to hear the siren?

One of the selling points on most cars today is halogen headlights. For safety reasons, the manufacturers recommend not looking at the bulbs directly. In many situations, it is impossible not to look into oncoming headlights. This is especially true where a center lane is a continuous left-turn lane. Is the human eye affected by looking into this light?

Why does every car seem to suffer from *windshield wiper phenomenon?* After several uses of the wipers in very light rain, the driver-side wiper tends to smear. So you play it smart and switch the wiper blades. The driver-side wiper still smears, and the passenger side wipes clear. You go out and buy new blades. The same thing happens. Why?

B. Lurie
Skokie, Illinois

Don't keep this magazine!

If there is something in this issue you want to share with a friend or co-worker—but you don't want to part with your copy—go ahead and give the magazine away. We'll reward your generosity by sending you a free, unthumbed replacement copy by return mail (while quantities last). **To receive your replacement copy, just drop a note to:**

Joel Wakitsch, *Traffic Safety* Circulation
444 North Michigan Ave., Chicago, IL
60611-3991

(Naturally, we'd be happy to hear what it was that you wanted to share.)

STATISTICS

December Traffic Deaths Down 9%

By Mary E. Johnston and Ursula Zuehlke

Motor-vehicle deaths in December totaled 3,710, a decrease of 9 percent from the December 1989 total of 4,070.

Deaths for the 12-month period ending December totaled 46,600, a decrease of 1 percent from the 1989 12-month total of 47,100.

Disabling injuries for 1990 are estimated to be almost 1,700,000. These are injuries resulting in disability beyond the day of the accident, and do not include minor injuries, which probably totaled as many more.

The cost of motor-vehicle accidents for 1990 is estimated to be almost $72 billion.

Based on preliminary vehicle mileage reports for this year, the estimated annual mileage death rate is 2.3 deaths per 100 million vehicle miles traveled.

Notes to Table

Deaths are reported by state traffic authorities. All figures are preliminary. To ensure proper comparisons, 1988 and 1989 figures cover the same reporting period as those for 1990.

States shown in CAPS had fewer deaths in 1990 than they did in 1989 for the same reporting period.

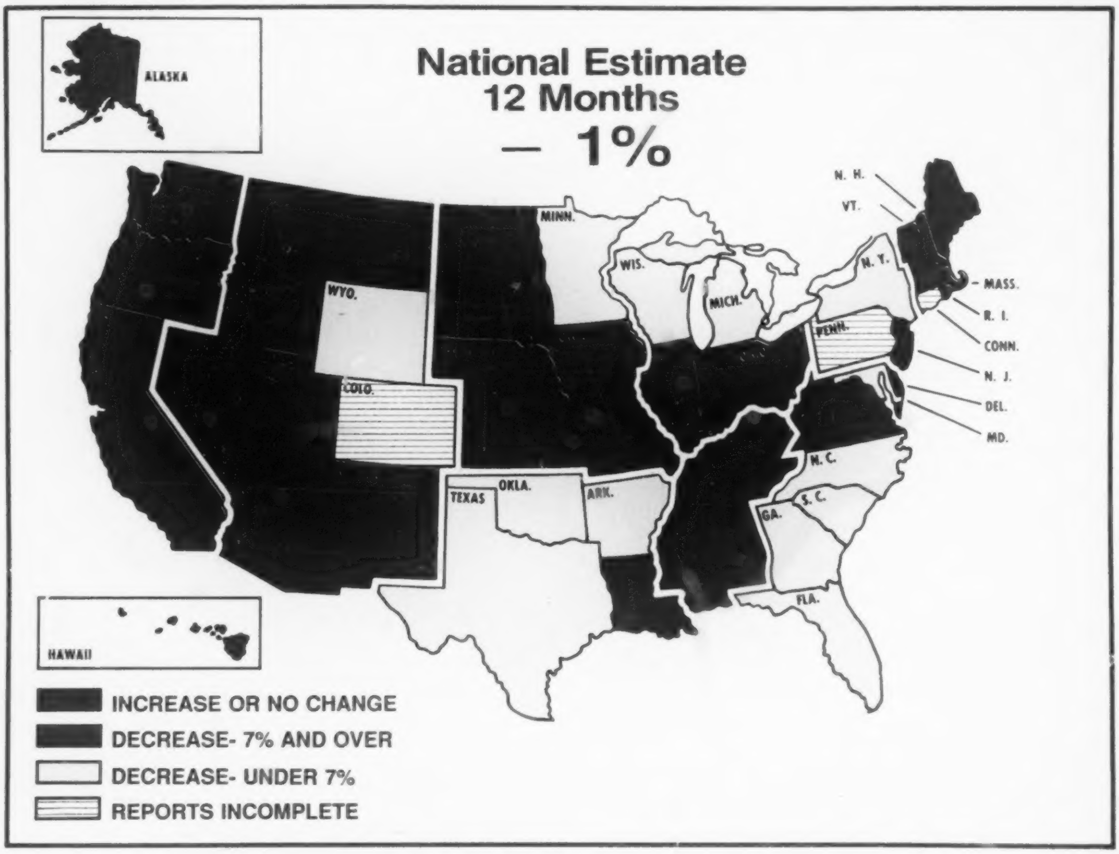
Population Rate: U.S. population rate and state population rates are the estimated annual number of deaths per 100,000 population. U.S. population rate is based on the July 1, 1990, population estimate; state population rates are based on July 1, 1989, population estimates, U.S. Bureau of the Census, Washington, D.C.

Mileage Rate: The number of deaths per 100 million vehicle miles of travel.

State Traffic Deaths

STATE	NO. OF MOS.	DEATHS IDENTICAL PERIODS 1990	1989	1988	PERCENT CHANGES 1989 TO 1990	1988 TO 1990	1990 POP. RATE	1990 MILE. RATE
Total U.S.	12	**46,600**	**47,100**	**49,078**	− 1%	− 5%	18.7	2.2
Alabama	12	1,076	1,004	994	+ 7%	+ 8%	26.1	2.4
Alaska	12	93	83	93	+ 12%	0%	17.6	2.7
Arizona	12	862	859	944	+ *%	− 9%	24.2	2.5
ARKANSAS	12	605	645	611	− 6%	− 1%	25.1	3.1
CALIFORNIA	12	4,706	5,105	5,091	− 8%	− 8%	16.2	1.9
Colorado	10	463	448	418	+ 3%	+ 11%	16.8	2.1
Connecticut	10	319	329	402	− 3%	− 21%	11.8	1.5
Delaware	12	142	118	164	+ 20%	− 13%	21.1	2.2
D. OF C.	12	55	75	62	− 27%	− 11%	9.1	1.6
FLORIDA	12	2,941	3,016	3,092	− 2%	− 5%	23.2	2.7
GEORGIA	12	1,530	1,599	1,591	− 4%	− 4%	23.8	2.3
Hawaii	12	175	147	149	+ 19%	+ 17%	15.7	2.1
Idaho	12	243	238	256	+ 2%	− 5%	24.0	2.8
ILLINOIS	12	1,585	1,722	1,865	− 8%	− 15%	13.6	2.0
Indiana	12	1,041	970	1,093	+ 7%	− 5%	18.6	2.0
IOWA	12	459	511	550	− 10%	− 17%	16.2	2.0
Kansas	12	435	416	475	+ 5%	− 8%	17.3	2.1
Kentucky	12	851	776	833	+ 10%	+ 2%	22.8	2.6
Louisiana	12	865	800	889	+ 8%	− 3%	19.7	2.4
Maine	12	211	190	246	+ 11%	− 14%	17.3	1.8
MARYLAND	12	724	746	788	− 3%	− 8%	15.4	1.8
MASSACHUSETTS	12	592	682	703	− 13%	− 16%	10.0	1.4
MICHIGAN	12	1,552	1,606	1,674	− 3%	− 7%	16.7	2.0
MINNESOTA	12	568	595	612	− 5%	− 7%	13.0	1.5
Mississippi	12	716	714	691	+ *%	+ 4%	27.3	3.3
Missouri	12	1,096	1,042	1,095	+ 5%	+ *%	21.2	2.4
Montana	12	211	181	197	+ 17%	+ 7%	26.2	2.7
NEBRASKA	12	262	294	260	− 11%	+ 1%	16.3	2.0
Nevada	12	338	307	286	+ 10%	+ 18%	30.4	3.5
NEW HAMPSHIRE	12	158	190	163	− 17%	− 3%	14.3	1.7
New Jersey	12	888	882	1,053	+ 1%	− 16%	11.5	1.4
NEW MEXICO	12	497	537	489	− 7%	+ 2%	32.5	3.2
NEW YORK	12	2,039	2,112	2,187	− 3%	− 7%	11.4	1.9
NORTH CAROLINA	12	1,368	1,451	1,580	− 6%	− 13%	20.8	2.4
North Dakota	12	111	81	104	+ 37%	+ 7%	16.8	2.0
OHIO	12	1,520	1,700	1,699	− 11%	− 11%	13.9	1.9
OKLAHOMA	12	646	651	634	− 1%	+ 2%	20.0	2.0
OREGON	12	578	622	677	− 7%	− 15%	20.5	2.3
Pennsylvania	10	1,363	1,559	1,483	− 13%	− 8%	13.6	2.0
RHODE ISLAND	12	83	100	124	− 17%	− 33%	8.3	1.4
SOUTH CAROLINA	12	983	998	1,035	− 2%	− 5%	28.0	3.3
South Dakota	12	153	151	146	+ 1%	+ 5%	21.4	2.3
Tennessee	12	1,154	1,073	1,229	+ 8%	− 6%	23.4	2.4
TEXAS	12	3,187	3,271	3,337	− 3%	− 4%	18.8	2.1
UTAH	12	270	302	298	− 11%	− 9%	15.8	2.2
VERMONT	12	87	116	128	− 25%	− 32%	15.3	1.5
Virginia	12	1,077	1,000	1,070	+ 8%	+ 1%	17.7	1.8
Washington	12	821	777	780	+ 6%	+ 5%	17.2	1.8
West Virginia	12	482	468	461	+ 3%	+ 5%	26.0	3.3
WISCONSIN	12	769	816	811	− 6%	− 5%	15.8	1.8
WYOMING	12	125	127	155	− 2%	− 19%	26.3	2.3
Puerto Rico#	2	86	103	114	− 17%	− 25%	18.9	—
Virgin Islands#	12	25	12	18	+ 108%	+ 39%	45.0	—
— CANADIAN PROVINCES —								
Alberta	12	397	488	461	− 19%	− 14%	25.1	—
British Columbia	11	620	520	560	+ 19%	+ 11%	32.0	—

#Not included in the **Total U.S.** death count or rates.
*Less than 0.5%.


National Estimate
12 Months
– 1%
ALASKA
HAWAII
WYO.
COLO.
MINN.
WIS.
MICH.
N. Y.
PENN.
N. H.
VT.
MASS.
R. I.
CONN.
N. J.
DEL.
MD.
N. C.
S. C.
GA.
FLA.
TEXAS
OKLA.
ARK.
INCREASE OR NO CHANGE
DECREASE- 7% AND OVER
DECREASE- UNDER 7%
REPORTS INCOMPLETE

Motor-Vehicle Deaths And Changes
Total U.S.

	Deaths				Percentage Changes		
					Corresponding Month		4-Month Moving Average +
Month	1987	1988	1989	1990	1988-1990	1989-1990	1989-1990
January	3,301	3,382	3,530	3,480	+ 3%	– 1%	– 5%
February	2,997	3,129	3,090	3,220	+ 3%	+ 4%	– 3%
March	3,517	3,595	3,660	3,480	– 3%	– 5%	– 3%
April	3,621	3,808	3,770	3,850	+ 1%	+ 2%	– *%
May	4,264	4,220	3,910	4,030	– 5%	+ 3%	+ 1%
June	4,279	4,319	3,980	4,150	– 4%	+ 4%	+ 1%
July	4,472	4,639	4,390	4,500	– 3%	+ 3%	+ 3%
August	4,815	4,683	4,370	4,620	– 1%	+ 6%	+ 4%
September	4,300	4,345	4,170	3,980	– 8%	– 5%	+ 2%
October	4,535	4,567	4,360	3,980	– 13%	– 9%	– 1%
November	4,169	4,005	3,800	3,600	– 10%	– 5%	– 3%
December	4,020	4,386	4,070	3,710	– 15%	– 9%	– 7%
TOTAL	48,290	49,078	47,100	46,600	– 5%	– 1%	

The 1987 and 1988 figures come from the National Center for Health Statistics. The 1989 and 1990 figures are National Safety Council estimates.

+ Four-Month Moving Average is based on changes between the totals for four months. For example, the December figure shows the change between the totals for September 1989 - December 1989 and September 1990 - December 1990. Adding several months together tends to smooth out single-month changes which may be affected by differences in the number of weekends in a month from one year to the next or by other random variations.

*Less than 0.5%.

TAKE VINCE AND LARRY'S CRASH COURSE IN SAFETY BELTS.

VINCE
LARRY
DUNC

LESSON NO. 1

"As you know, Larry, pretty soon all cars will come with automatic safety belts or air bags—and I don't mean your mother-in-law!"

"That's right, Vince, but these new automatic gizmos only do part of the job to keep you from being a windshield warrior. You've still got to make sure your safety belt is buckled up."

LESSON NO. 2

"Larry, do you know what works best when they fit tightly?"

"My Uncle Bernie's false teeth?"

"No Larry, safety belts. You've got to always make sure that yours is snug and that whatever safety belt system your car comes with is in a-ok-working order."

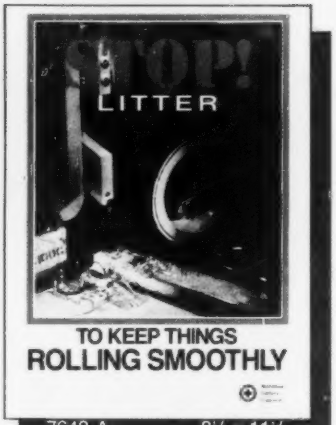
YOU COULD LEARN A LOT FROM A DUMMY. BUCKLE YOUR SAFETY BELT.

A Public Service Message Ad U.S. Department of Transportation

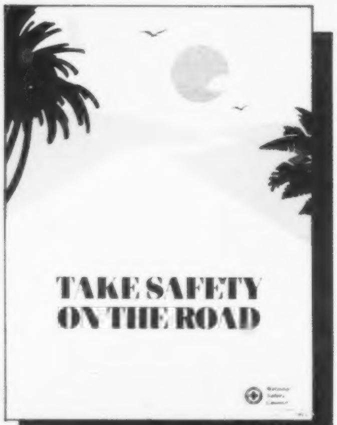
"Vince and Larry" © 1985 U.S. DOT

NEW POSTERS

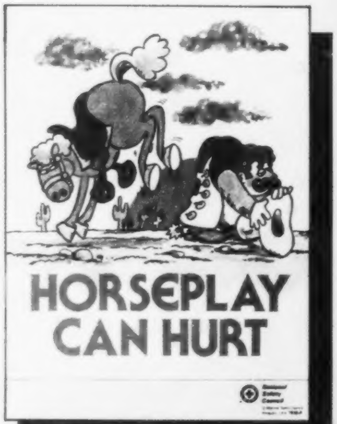
MAY/JUNE 1991


STOP!
LITTER
TO KEEP THINGS
ROLLING SMOOTHLY

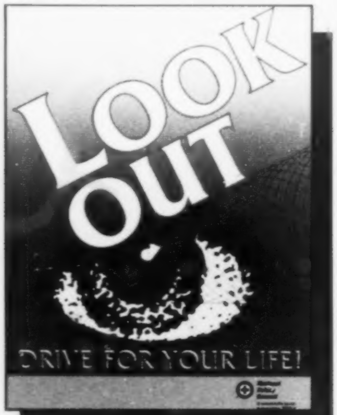
7642-A 8½ x 11½
7643-B 17 x 23


TAKE SAFETY
ON THE ROAD

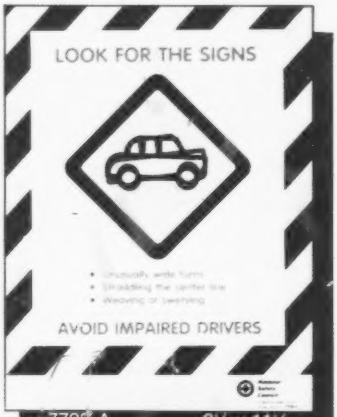
7689-A 8½ x 11½


HORSEPLAY
CAN HURT

7618-A 8½ x 11½


LOOK
OUT
DRIVE FOR YOUR LIFE!

7749-A 8½ x 11½


LOOK FOR THE SIGNS
AVOID IMPAIRED DRIVERS

7723-A 8½ x 11½
7724-B 17 x 23

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July / August 1991

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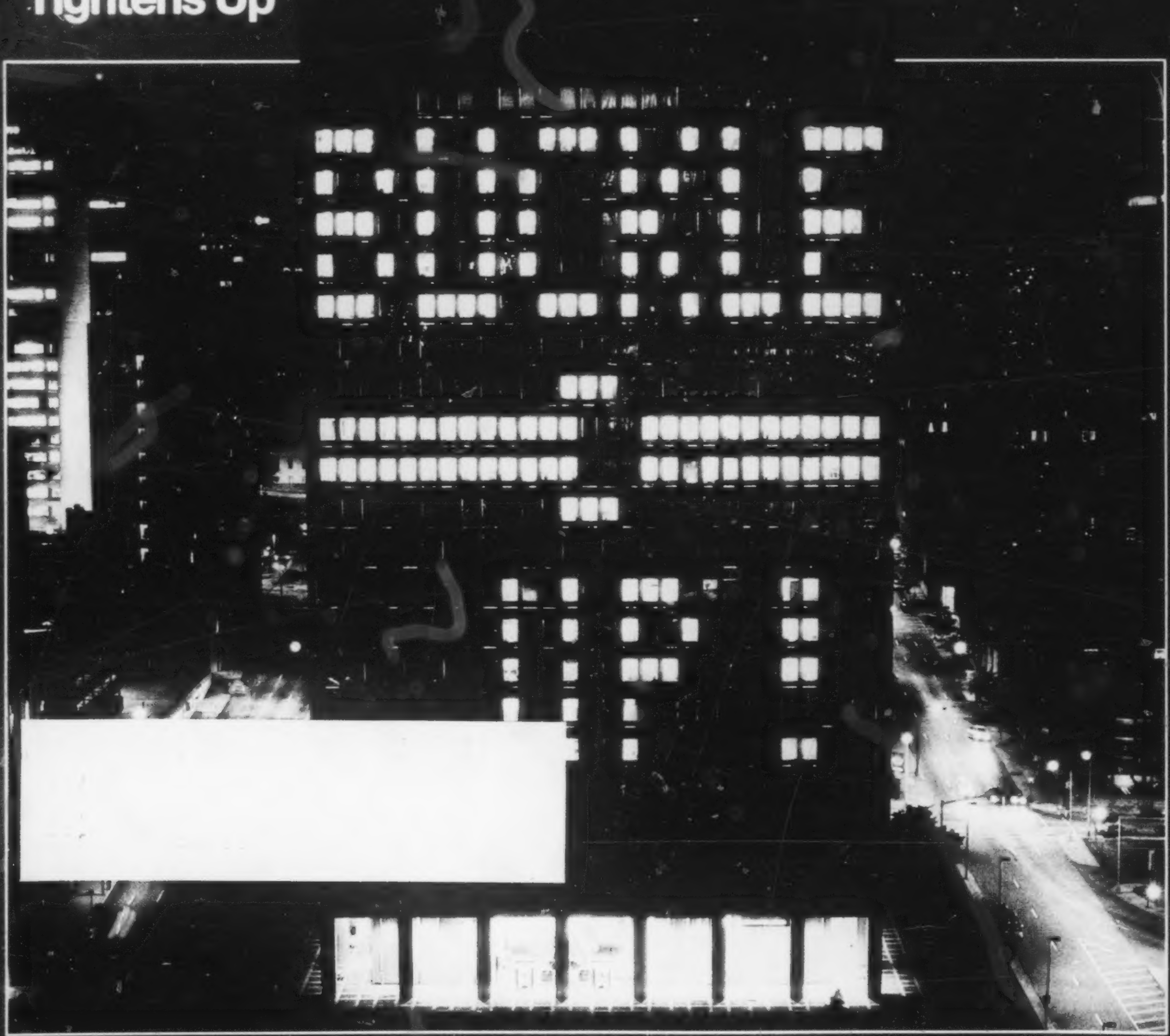
TRAFFIC SAFETY

National Safety Council

Safety-Belt Campaign Tightens Up

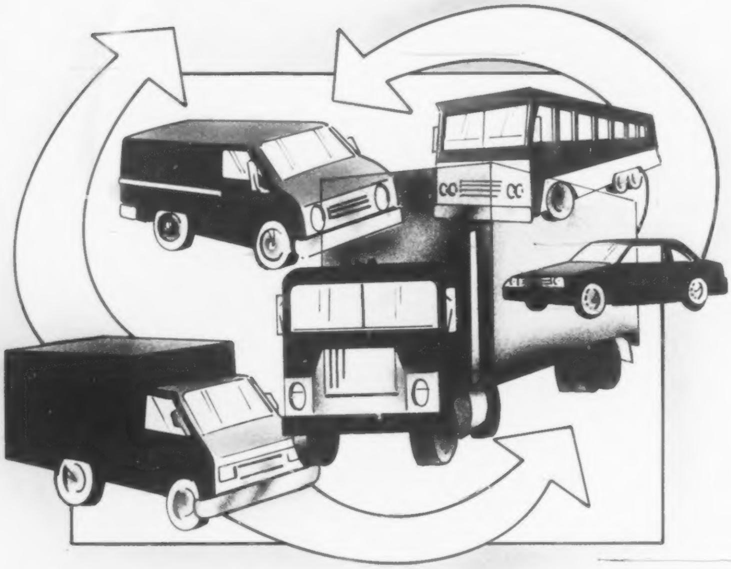


Work Zones or Death Zones? • Lawsuits Confound Highway Agencies

Comprehensive Loss Control Assistance For Your Motor Fleet From

GREEN CROSS FOR SAFETY

National Safety Council



You're aware of how costly motor fleet accidents can impact your operation. Statistics show that 37% of all occupational fatalities are due to on-the-job motor vehicle accidents.* Company time and profits can be absorbed by vehicle repair, employee health care and compensation, and increased insurance premiums.

Let the National Safety Council's Fleet Safety professionals provide you with a *comprehensive, customized on-site safety audit.* Our transportation safety experts will work side-by-side with your fleet safety managers to determine the most effective safety and loss prevention program.

*Services Designed to Make Your Operation Safer—and More Profitable

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- **Review of organizational safety philosophies, initiatives, and responsibility assignments**
- **Policy scope and applicability**
- **Review of employee hiring and training processes**
- **Accident trend review**
- **Review of organizational compliance with Federal Regulations**
- **Review of audit findings and proposed recommendations**
- **Review of specific organizational requirements**

Ask about the many other consulting services available to help you achieve your operational goals.

*Professional Consulting Services Designed to Help Drive Down Fleet Accidents and Their Costs—No Matter What Business You're In

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For more information on this unique service, contact Les Sokolowski, Director, Motor Transportation, National Safety Council, at (312) 527-4800, ext. 8421.

**Accident Facts, 1989 Edition*

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July/August 1991

National Safety Council

TRAFFIC SAFETY

Vol. 91 No. 4

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While the information and recommendations contained in this publication have been compiled from sources believed to be reliable, the National Safety Council makes no guarantee as to, and assumes no responsibility for, the correctness, sufficiency, or completeness of such information or recommendations. Other or additional safety measures may be required under particular circumstances.

Printed in U.S.A.

TODAY'S TRAFFIC

Citizens Shoot Offenders

Individuals who can't pass up parking spaces reserved for the handicapped driver are in for a surprise in Westport, Conn. Police in this suburb of New York have joined together with some of its citizens in a unique program called Handicop.

Using Polaroid instant cameras, Handicop volunteers document parking offenses with photos of the offending vehicle's license plate along with the handicap parking sign. Photos are submitted to the police, who then mail tickets with copies of the pictures to the offenders.

The Handicop program resulted from complaints about able-bodied drivers who use handicapped spaces in Westport's congested downtown. Consequently, handicapped drivers have been forced to park far from their destinations. According to public safety officer Robert Quinn, "In Westport, handicapped parking violations account for 20 percent of illegal parking."

Before shooting a picture of a possible violator's car, Quinn says that a volunteer must look the vehicle over carefully since state laws differ on where a handicapped parking sticker is placed.

Art Draws Transit Attention

Results of an art student project drew major attention from American big-city transportation planners. For 14 weeks last year, selected students from Art Center College of Design, Pasadena, Calif., examined urban transit problems common to many major U.S. cities.

This year, the same students unveiled three-dimensional models, artistic renderings and maps of proposed public transportation systems to address these common urban transit dilemmas. "These ideas are a breath of fresh air," says Mark Yamarone, a transportation planner for the city of Burbank, Calif. The students used real technologies and innovative designs in a forward-thinking way. "The designs are as feasible as any of the projects I've seen proposed [by any other source]," says Yamarone.

Sponsored by the American Iron and Steel Institute (AISI), the project asked students to examine congestion, pollution, high injury and mortality rates from accidents, and wasted time and productivity in city transportation systems. The students then were to develop ideas for more efficient, economical, appealing and environmentally safe systems adaptable to existing city transportation networks.

The students' ideas include the following futuristic innovations:

- A "smart" road system where individual vehicles drive on specially designed ramps: A destination is selected. Cellular beacons then interlinked to computers communicate highway information and control all vehicle interaction along the system.
- A modular street transport system using simple steel-laminate tracks that could be transported by truck, easily installed on existing roadbeds and moved as traffic patterns change. The tracks are designed to accommodate individual cars or corporate-owned transport vehicles for shuttling employees to major business centers. This solution would minimize environmental impact and would not require significant manufacturing innovation.

All of the student designs incorporate the environmental and safety benefits of steel, which is 100 percent recyclable. Each team suggests downsizing as one way to increase vehicle efficiency and gain room for the highway.

"With the use of new steels, which can lower weight and maintain or increase strength, they do not have to compromise occupant safety," says George Szostkowski, project director at AISI in Southfield, Mich. The students' "blue sky" projects are not intended for production, but rather to introduce the students to real world design challenges.

AISI is a non-profit association of the iron and steel industry with members throughout the United States, Canada and Latin America.

Electronic Readers Collect Tolls

Seven major toll agencies in New Jersey, New York and Pennsylvania have agreed to work together on a compatible, regional electronic toll collection system. Serving 37 percent of all toll traffic in the United States, the agencies intend to reduce congestion and delay at toll plazas.

The system, called Electronic Tolls and Traffic Management, uses an electronic "reader" in the toll lane. Each time a car passes through, the reader registers the small electromagnetic tag on the vehicle's front windshield. A toll amount is then deducted from the owner's prepaid account.

The initial operation does require a brief stop or "roll through" at the toll booth. However, ETTM has the potential for non-stop payment, according to the Triborough Bridge and Tunnel Authority of New York.

A reduction in vehicle emissions and fuel consumption is an added advantage of the system: ETTM cuts time waiting in line and streamlines accounting and security procedures.

The Port Authority's Lincoln Tunnel currently uses

ETTM for eastbound commuter buses to ease congestion during morning rush hours. Texas, Louisiana and Oklahoma also have the electronic systems in operation.

The ETTM electronic readers also can monitor traffic at selected highway locations to detect prevailing speeds and assist in incident management.

AMTRALEASE Honors Safe Driver

Norbert Dams, a driver for Ashland Chemical Inc.'s Industrial Chemicals and Solvents Division, was selected from more than 20,000 candidates as "National Driver of the Year" by AMTRALEASE. AMTRALEASE is one of the country's largest associations of independent truck leasing companies.

Dams drives a tractor trailer leased from the association's member Kinnie-Annex Cartage Company, Warren, Mich. AMTRALEASE selected Dams on the merits of his safety and driving records, knowledge of transportation regulations, service, courtesy and civic mindedness.

Since he joined Ashland Chemical in 1968, Dams has not had any preventable or non-preventable accidents. Dams has also been awarded the company's "Two Million Mile Driver" honor.

Bridge-Design Software Wins Award

An innovative computer software program designed to reduce labor and time to design and draft a bridge project has won an Honor Award in this year's Engineering Excellence Awards Competition.

The winning program, Expert System Producing Automated Designs and Drawings for Bridges (ESPADD.BR), was developed by Louis Berger & Associates.

ESPADD.BR can quickly and accurately provide solutions to meet the complex requirements of various federal and state codes. The software does not require specially trained draftpersons and can adapt to most hardware. Therefore, ESPADD.BR may help alleviate the problem of a decreasing supply of experienced bridge designers and draftpersons.

In addition, the system's ability to guide a design through its various stages results in substantially fewer work hours to complete a bridge project.

The annual Engineering Excellence Awards recognize outstanding engineering achievements that have an impact on local communities and the public. The competition is sponsored by the Consulting Engineers Council of New Jersey, a non-profit organization dedicated to maintaining high ethical and technical standards in the engineering profession.

SHORTCUTS

Helmets Head Off Injuries

A public awareness campaign called PRO-RIDER is being reintroduced in a joint effort by the National Highway Traffic Safety Administration and the American Motorcyclist Association. The campaign is to encourage safe motorcycling habits, particularly wearing helmets.

More than 80 percent of all motorcycle crashes currently result in injury or death, with more than 3,000 fatalities each year, according to NHTSA Administrator Jerry Ralph Curry. Motorcyclists are 20 to 30 times more likely to die in a crash than passenger-car drivers.

"Unhelmeted riders are 40 percent more likely to incur a fatal head injury and 15 percent more likely to incur a head injury of lesser severity. We estimate that helmets reduce the rate of death among motorcyclists by 29 percent," says Curry.

The program, which completed its first phase in 1990, urges motorcyclists to heed the PRO-RIDER Code, a common-sense guide to safe motorcycling. Participants receive a set of red, white and blue reflective helmet decals designed to encourage helmet use, especially among young motorcyclists.

The safety code encourages cyclists to become properly trained and licensed to ride, discourages drinking and promotes helmet use. By instilling a sense of responsibility in young motorcyclists, it is hoped that subtle peer pressure will be applied to others who have not received the PRO-RIDER message, says NHTSA.

The PRO-RIDER program is available through selected retail motorcycle outlets and rider education sites throughout the U.S. More than 2,700 point-of-purchase counter displays will be distributed nationwide by the American Motorcyclist Association.

Courtesy: Society of Automotive Engineers Inc. 1990 billboard campaign

Safety-belt Campaign Tightens Across America

The nation's police may be the ticket to the buckle-up goal.

By Jerry Ralph Curry

If an airliner crashed on a Monday, killing 125 passengers, Americans would be upset, and perhaps slightly more apprehensive if they happened to be flying within the next few weeks.

If a second plane crashed on Tuesday, killing another 125, the coincidence of major tragedies occurring on consecutive days would certainly be noted, and with some alarm.

If a third plane crashed on Wednesday, killing yet another 125, a fearful public would begin to ask, "What's going on here?"

When the fourth plane crashed, on Thursday, an outcry for a major review of air-safety practices would sweep across the country.

And on Friday, with the fifth crash, a traumatized America would more than likely refuse to fly.

America already suffers the equivalent of a major airliner crash every day of the year. It takes place on the highways, where motor-vehicle collisions claim about 125 lives each 24 hours, plus thousands of injured. Somehow that reality has worn so thin that most people look right through it. Standing among the trees, the forest escapes notice.

Perhaps that explains the implied shrug of indifference so long accorded safety belts. They have been required equipment in the front seats of passenger cars since January 1, 1968, but a dozen years later, no more than one in nine people used them regularly.

Only when state safety-belt laws began to click in — New York was first in 1984 — did the user curve turn upward. Now, seven years later, 38 states have laws in place, 49 percent of vehicle occupants wear belts, and about 4,800 deaths are prevented annually as a result.

So the gain is real, measurable, and frankly, marvelous. But what America isn't getting because the other half fails to buckle up qualifies as nothing less than stark tragedy. One hundred percent safety-belt use would mean 15,000 lives saved every year. Even 70 percent use (based on 1990 numbers) would save a total of 8,450 annually.

A national safety-belt use rate of 70 percent by 1992 happens to be the objective of a major U.S. campaign launched this summer by the National Highway Traffic Safety Administration.

Convincing millions of Americans to buckle up in two short years is no easy task. That's why NHTSA has joined forces with the National Safety Council and other private sector organizations to form a new

BUCKLE UP
IT'S THE
LAW

Philadelphia Electric Company's Crown Lights display informs motorists of Pennsylvania's safety-belt law.

national "70% by '92 Safety Belt Coalition." The coalition is mobilizing the resources of the private sector to demonstrate support for safety belts and for the goals of this new program.

Groups headed for the number 70 are springing up across the country, revealing the unusual nature of this effort: For the first time in U.S. history, a safety-belt campaign is capturing the focus and energy of the entire country, moving under the banner of a common theme and calling upon similar tactics.

The participants are national, state and local government; business; industry; education; safety-proponent groups; civic and service organizations; police; and individuals. The message they are sending is reaching the public in both words and deeds.

The words are *Buckle Up — Avoid the Summertime Blues*. The deeds are manifold. This time, the deeds are also those of the men and women in blue — the police community — which is taking the responsibility to significantly increase adherence to safety-belt and child safety-seat laws.

No more than one in nine people use safety belts regularly.

Highway patrols, sheriff's departments and municipal police agencies of the country are being asked to accept key responsibilities for overall success of the program. Enforcing safety-belt laws — energetic, enthusiastic enforcement — is their charge.

There is a role to play for everyone — motivating employees to buckle up; congratulating a police agency for doing a good job enforcing the law; or adding a buckle-up message to corporate advertising. It all adds up, and it all helps save lives.

Between the '91 and '92 summer campaigns, efforts will continue at the state and local levels to make safety-belt enforcement a regular part of ongoing traffic enforcement activities. NHTSA is providing state and local police agencies with a variety of resources to help them implement a model safety-belt enforcement program developed in cooperation with the International Association of Chiefs of Police and endorsed by the National Sheriff's Association.

Like golfers on the green who watch the track of the first ball putted to get a good "line," this safety-belt effort echoes the successful approaches of at least three states and the entire nation of Canada.

Our northern neighbor had drifted for some years in the region of 50 percent belt use. Canada injected what for that time was a new vaccine: an advertising barrage, widespread publication of police intent to increase belt-law enforcement, followed by fulfillment of the promise, a formal measure of change in the use rate, a pause — then a restart.

The cyclical approach let Canada bump its national rate to 80 percent; in several provinces it now tops 90 percent. Hawaii followed a like pattern, and use zoomed to 85 percent. Texas and California have embarked on very similar programs, and both hover at the near-70 percent mark today. All have taken the same approach — visibility, information and enforcement.

The new ingredient and clearly major contributor to surging use percentages has been enforcement, consistently applied and subtly spiced by police officers who wear belts themselves.

The latter wasn't always true, for a variety of reasons, but police now more frequently acknowledge the significance of the user image. They buckle up because it does make a difference — both to their safety (They are up to 10 times more likely to crash than the average motorist.) and to what other people think about belts.

The logic of the campaign theme becomes clear in light of the enforcement element. The "summertime blues" could be the officer in the blue uniform striding up to the car window of the unbuckled occupant. Or it could be the way a driver feels after receiving a traffic citation for no belt in place. Or maybe it's the frame of mind provoked by the consequences of a citation — a fine or an increase in insurance rates.

The blues message is travelling the classic information circuits — television, radio, newspapers, magazines, billboards, advertising, pamphlets. The message is being conveyed: Safety-belt laws are now being enforced. The now legendary

Safety-Belt Statistics

- 6.6 million motor-vehicle crashes are reported by the police each year.
- 17 million people and 12 million vehicles are involved in these crashes.
- 3.4 million persons were injured or killed in these crashes.
- About 45,000 deaths result from these crashes; that's an average of 123 deaths per day (similar to a major airline crash every day of the year.
- 25,000 passenger-car occupants die every year (that's about 2,000 more than the total number of homicides that occur in the United States each year).
- Annual cost to society of motor-vehicle crashes is $74 billion (annual cost of personal crime is $14 billion).
- Lap/shoulder belts are 40 percent to 50 percent effective in reducing deaths and 45 percent to 55 percent effective in preventing serious injuries to passenger-vehicle occupants.
- In 1989, if every front-seat occupant had buckled up, an estimated 15,500 deaths and several hundred-thousand serious injuries could have been prevented; total savings, $10.5 billion.
- In 1989, 100 percent correct use of child-safety seats could have prevented nearly 500 deaths and about 56,000 serious injuries to children under age 5.
- With the passage of laws in 38 states, the District of Columbia and Puerto Rico, the national use rate has gone from 15 percent (1984) to nearly 50 percent (1990).
- Belt use in states with a law is generally 50 percent higher than use rates in non-law states.
- Use rates above 50 percent are seldom reached without emphasizing belt-law enforcement and publicity about the need for that enforcement.
- California, Texas and Maryland have shown that well-publicized enforcement can produce use rates near 70 percent; Hawaii has reached 80 percent.
- Public opinion surveys reveal that 88 percent of respondents believe belts save lives and reduce injuries; 75 percent say they favor belt-use laws; 70 percent say the risk of receiving a citation would make them buckle up; 65 percent (in law states) say police should issue more citations—but about one-half still fail to buckle up.

Courtesy: NHTSA

Vince and Larry play a role in the Buckle Up Campaign.

characters, Vince and Larry, the Safety-Belt Dummies, are center stage in this campaign, too.

And the word is travelling as well through person-to-person contact: One-on-one, one-on-several, one-on-groups; employer to employees, advocate to interested audience, teacher to students, parent to teenager (and maybe vice-versa).

The Memorial Day holiday was chosen as the starting point for "70% by '92" because traffic police typically are assigned in force for holiday periods, and safety publicity runs at maximum flow as well. Second and third surges are following during the July Fourth and Labor Day holidays.

After that, the emphasis continues at elevated levels into the target year, until the use thermometer touches 70. Of course, that won't be the end, because 70 should be the way-station, not the terminus. But for now, 70 is both an ambitious and reasonable national goal.

The success formula seems clear: Safety-belt use depends on a belief and a reminder. Conviction seems to be no problem. A recent survey showed that 88 percent of the public believes that safety belts work, they do protect.

The best reminder available is an enforcement action, taken by an officer who is twice committed — first to wearing a belt, second to helping others remember to put it on.

In California, a traffic crash involving a man, a bear and a belt frames the issues precisely, though painfully. A 31-year-old driver struck a guard rail. His car went airborne and dropped on a chain-link fence.

He was ejected and died at the scene. A teddy bear, carefully buckled into the rear seat belt, remained snugly in place, an exquisite reminder of what belts are for.

A man dies, but a stuffed animal rides protected. The point of "70% by '92" is helping people get priorities in order. The message for that half of America which now rides unbuckled: There is a safer way! STOP

For more information, contact National Safety Belt Coalition, 1850 M Street, N.W., Suite 900, Washington, DC 20036. (202) 785-4151.

Jerry Ralph Curry is administrator, National Highway Traffic Safety Administration, U.S. Department of Transportation.

Courtesy: California Department of Transportation

Risk runs high for workers as vehicles whizz by work zones.

Are Work Zones Actually Death Zones?

By Thomas Frisbie

On April 2, 1990, an automobile on Interstate 80 near Sacramento, Calif., crashed into a construction area at such a high speed that the car flew into the air and killed two men working 10 feet above the roadway.

Seventeen days later, a worker installing lane markers was killed and a second was injured on Interstate 405 in Orange County, Calif. A van (whose driver also was killed) had smashed through a construction barrier.

Then, less than a month after that, on May 17, two more California highway workers died when a motorist broke through a barrier on Interstate 5 south of Stockton, hit the workers and dragged their bodies for 150 feet.

The deaths stunned officials of the California Department of Transportation. They had just won an Emmy award for a video on work-zone safety. In response, Caltrans created a special task force to re-examine the state's work-zone safety policies.

Among the recommendations in the task force's report issued this spring was a call for stricter enforcement of traffic regulations in work zones.

In states throughout the country, more and more officials are turning to the police to help make work zones safer. Police are needed, officials say, because without them motorists tend to ignore reduced speed limits in construction and maintenance areas. And this creates a deadly hazard.

"When you get into a work zone, you have changed conditions—and the driver isn't expecting it," says Rudolph Umbs of the Federal Highway Administration's Office of Highway Safety. The only way to slow people down, he says, is to actually have a police officer out there in a marked car sitting on the side of the road, ready to issue a ticket.

Are They Death Zones?

Just a tiny percentage of the nation's highway system runs through construction or maintenance areas at any given time, but each year hundreds of people die in those areas.

Work-zone deaths jumped from 489 in 1982 to 756 in 1988 and 782 in 1989. That's partly because less and less road work involves new construction. And more road work involves maintenance or other work in the presence of traffic on existing roads, officials say.

State highway departments are working more closely with highway patrols and local policemen because they are starting to realize that the times have changed, says Jay Ciccotti, of Barrier Systems in Sausalito, Calif. Everyone is in a hurry, Ciccotti says. "It is probably one of the most hazardous jobs in the world now."

"If you are driving in your car going 65 m.p.h.," Umbs says, "it doesn't seem so fast. But if you are a worker standing out there, 65 m.p.h. is unbelievably fast when they are whizzing by you. It is unreal." It is critical, he says, that lowered speed limits be enforced.

Police Work Overtime

In Wisconsin, state officials created a new policy in July 1986 to help ensure that lowered speed limits are observed. The program coordinates extra surveillance by the state patrol in major work zones selected by the Wisconsin Department of Transportation. Now the program also includes local police departments, such as the Milwaukee County sheriff's police.

Police officers work on overtime when traffic is most congested, when accidents are more likely to occur, says William Bremer, safety and program coordinator for the FHWA's Wisconsin division. "Extra enforcement is done only during time periods of when we expect it to have real positive benefits."

One thing extra patrols concentrate on is enforcing reductions in speed limits before traffic reaches the work site.

There is the open freeway speed, and then a point where congestion is starting to build up, Bremer says. This causes backups to occur, and high-speed traffic is mixing with low-speed traffic. "All of a sudden, you have lots of accidents."

In Missouri, this summer marks the third year of a program to make work zones safer. Because of that program, the state's highway patrol now is part of a planning group, along with the Missouri Department of Transportation's Division of Highway Safety. The highway patrol has put a major effort into reducing speeds, says Joseph Mickes, in Missouri's state transportation department. Missouri has employed local police officers off-duty. And the highway patrol is enforcing construction-zone speed limits.

"We have dovetailed that to be sure we are not putting speed limit signs up when there is no work going on," says Mickes.

In Pennsylvania, the state legislature two years ago ordered that all fines for traffic violations in work zones automatically be doubled. A similar measure now is under consideration in California, where a plan to use police radar to enforce speed limits in work zones also is being explored.

In addition, Caltrans this year requested $1.5 million for extra highway patrols in construction work zones and $1.2 million for supplementary police in maintenance zones. In the following fiscal year, Caltrans plans to ask the state legislature for a total of $4.5 million for the two programs. Interest in work-zone safety is becoming more and more widespread, says Caltrans spokesperson Lisa Covington.

In Florida, increases in traffic and the amount of construction work done at night have led to a new program in which contractors on major road projects are required in their bids to include overtime pay for a police officer at the site. The

PROTECT OUR WORKERS
OBEY WORK AREA SIGNS
FINES DOUBLED IN
WORK AREAS

Courtesy: Pennsylvania Department of Transportation

Pennsylvania means business. On this route, speeders pay steep fines for not slowing down in work zones.

cost for one police officer and patrol car is about $20 to $25 an hour.

It has made a tremendous difference, says Charles Peterson, area construction engineer for the Florida Department of Transportation. "The idea is not to get a ticket written, but to slow traffic down, to move it in an orderly fashion."

Patrolling or Playing?

Enthusiasm for the concept of hiring off-duty police officers to patrol work zones is not universal, however. In one northeastern state, for example, police officers have been criticized for idly lounging in parked squad cars and chatting with road workers — and never writing tickets — while collecting overtime pay from contractors.

It is probably one of the most hazardous jobs in the world now. — Jay Ciccotti

Ed Rice, a transportation-safety engineer in FHWA's Florida division, believes the next step in improving law enforcement in work zones requires the development of guidelines for police. Such guidelines might spell out when to use additional patrols, where to station them and whether to set aside an area where police could curb traffic violators.

There are no research studies or good guidelines to be found, Rice says. "It is a big gray area."

Some guidelines may emerge, however, after the completion of current research, including a $190,000, three-year study that was launched in July 1988 in Illinois. That study is examining, among other factors, the safety benefit of having police present in a work zone.

Safer Zones Planned

In most work-zone fatal accidents, vehicles collide with fixed objects such as barriers, and most occur at night, according to the FHWA.

"Usually, it's a single-car accident or a person in the middle of the night who, after drinking a lot, runs off the road and kills himself," Peterson says.

Most daytime fatalities are caused by vehicles colliding with each other, reports the FHWA. And tractor-trailer trucks are over-represented in fatal work-zone accidents.

Of course, highway patrols can't prevent those kinds of accidents by themselves. So highway safety officials are trying to help police by making sure that warning signs reflect actual conditions and by designing safer work zones that don't require drastic changes in speed limits.

"We try to bring work zones up to the speed of traffic because that's in effect the speed we are going to get anyway," says Henry Sandhusen, a highway engineer in the FHWA's Office of Highway Safety.

For example, building a simple, unelevated crossover for traffic detoured from the original road saves money. But this requires traffic to slow down to 35 m.p.h. or 40 m.p.h., which makes enforcement difficult.

A "super-elevated" crossover costs more to build, but lets traffic flow at a much higher speed. This makes law enforcement easier, says Sandhusen, a highway-safety specialist.

Costs Hit Hard

Work-zone traffic control costs up to 25 percent of the total cost of one project, Sandhusen says. A lot of times, that is hard for an agency to pay. "They spend 10 percent on traffic control. . . . Then, if you go to your boss and say you don't have enough money to pay for the traffic control, he is going to say: Make it work."

Another thing highway officials can do to make law enforcement easier is to make sure that warning signs are posted only when needed, Sandhusen says. They really go after "these guys with the 'flagger ahead' signs. There is never a flagger ahead. I've seen these signs left up over the weekend."

Of major concern is that motorists may ignore the sign in the next location. "When a sign is up, we want one that conveys important information."

In a survey done last summer in Georgia and Missouri, researchers found that motorists were aware that speed limits had been lowered in a work zone, but that they didn't slow down if they didn't see any work under way.

"What it says to us is that motorists really will slow down, at least to some degree, if they see proper evidence of work going on," says Jerry Graham, of Graham-Migletz Enterprises of Independence, Mo.

Graham's company conducted the survey as part of a $200,000, 21-month study on how to determine speed limits for work zones. "We were surprised by how well people recall signs about speed limits in work zones."

This summer, Graham-Migletz will begin road tests of various devices designed to make work zones safer. The devices were based on ideas generated by a competition sponsored by the National Research Council's Strategic Highway Research Program. Most of the devices are designed either to protect workers from intruding vehicles or

to give drivers clearer warning messages.

Meanwhile, around the country, most states have launched public-information programs using the slogan: "Give 'em a brake" or a variation to alert the public to the dangers of work zones. But at times, it seems no amount of public information or law enforcement will persuade some motorists to drive safely.

Traffic Tricks Work

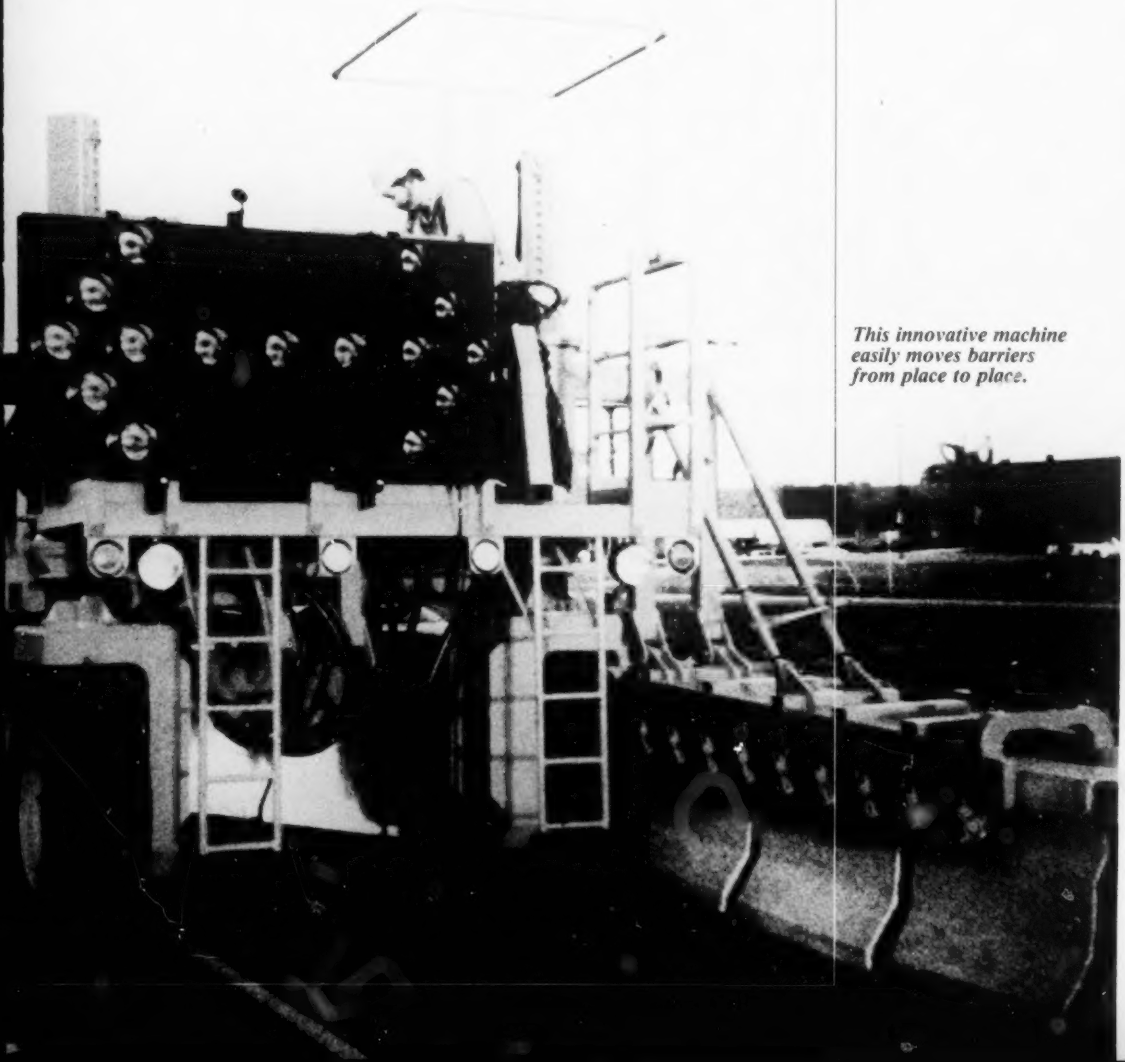
Motorists might be inclined to speed up after they pass a patrol car — perhaps thinking they are in an area where it is safe to speed. This theory was put to a test when police set up three successive patrols in the early 1980s on the George Washington Memorial Parkway. The parkway runs along the Potomac River on the Virginia side of Washington, D.C.

After two hours, the first police officer had given out about 70 tickets. The second officer had given out about 30, and the third had given out about 15 tickets, Sandhusen recalls.

Remarkably, three motorists had received three speeding tickets each—one from each police officer, Sandhusen says.

So what's the solution?

"Well, sometimes we have thought of hiring an old lady who drives very slowly through the work zone with her arms wrapped around the steering wheel while everyone is honking behind her," Sandhusen jokes. "Maybe that would slow the traffic down."



This innovative machine easily moves barriers from place to place.

Courtesy: Barrier Systems Inc.

Washington World

Drunk Driving: Not What It Used To Be

By Jim Castelli

Researchers at the U.S. Centers for Disease Control have studied National Highway Traffic Safety Administration figures on alcohol-related traffic fatalities between 1982 and 1989. Their studies stressed figures for teenagers and young adults — age groups 15 to 17, 18 to 20, 21 to 24, and 25 and older. Here are some of their findings:

- The percentage of alcohol-related traffic fatalities dropped in all four age groups. The decline was greater for those 15 to 17 (31 percent) and those 18 to 20 (22 percent) than for those 21 to 24 (7 percent), and those 25 and older (11 percent).
- The number of actual alcohol-related traffic deaths decreased for those in the younger groups. But it increased among those 25 and older. In 1982 there were 14,094 fatalities involving drivers 25 and older. In 1989 there were 14,539.
- The percentage of drivers in fatal crashes who were alcohol impaired dropped in all four age groups, with decreases greater for those 15 to 17 (40 percent) and those 18 to 20 (28 percent) than for those 21 to 24 (13 percent), and those 25 and older (14 percent).
- Drivers under 25, particularly those 15 to 17, were more likely to be involved in fatal crashes — whether or not they were alcohol impaired — than those 25 and over. For every 100,000 drivers in each age group, 67 percent of those 15 to 17, 47 percent of those 18 to 20, 31 percent of those 21 to 24, and 21 percent of those 25 and older were involved in fatal crashes.

Chart 1

Percentage of Alcohol-Impaired Drivers in Fatal Crashes

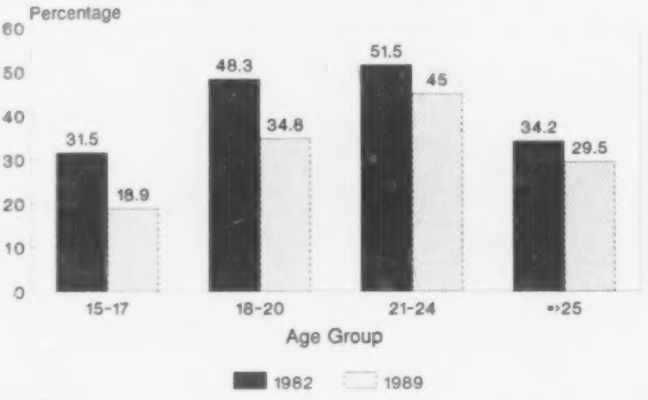
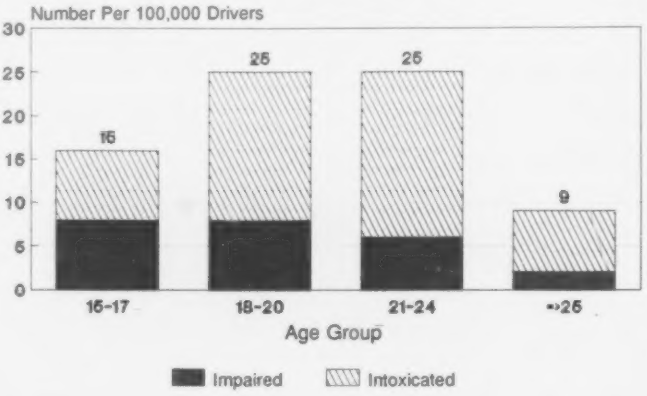


Chart 2

BAC In Alcohol-Impaired Drivers Involved In Fatal Crashes



- Older drivers were more likely to be intoxicated when involved in a fatal crash.

A fatal traffic crash is alcohol related if either a driver or non-occupant (for example, pedestrian) had a blood-alcohol content of more than 0.01 g/dl in a police-reported traffic crash, according to NHTSA.

Chart No. 1 shows the percentage of drivers in fatal crashes who were alcohol impaired in 1982 and 1989. Chart No. 2 shows, by age group, the number of drivers, per 100,000 drivers, who were alcohol impaired or intoxicated when involved in fatal crashes.

NHTSA Acts on Air Bags

Spring was a busy time for NHTSA. The agency acted on issues ranging from air bags to school buses.

NHTSA's major action was a new regulation that requires auto manufacturers to begin equipping the front seats of passenger trucks, vans, small buses and utility vehicles with either air bags or automatic seat belts in 1994. By Sept. 1, 1997, these vehicles must have automatic crash protection. The rule extends the standards now in effect for passenger cars to other vehicles.

NHTSA's action came at the same time key senators introduced legislation to make air bags standard equipment in all new cars by late 1995 and in all light trucks and vans by late 1997.

NHTSA administrator Jerry Curry says the new regulation could save 2,000 lives a year. Supporters of the proposed legislation say their bill could save 12,000 lives a year.

Curry told a Senate subcommittee the new regulation should quicken the pace at which automakers are making air bags a standard feature. He predicts that 90 percent of new cars will have the bags on driver and passenger sides by the 1996 model year.

Air bags are becoming the manufacturers' choice in passenger cars for what we believe are excellent reasons, Curry says. "And we hope we hear a loud echo as this protection starts to become available in light trucks, vans and multipurpose vehicles."

But Curry declines to endorse the Senate bill. He says its timetable "is not unreasonable and generally coincides with what we believe will happen anyway. However, the bill does lack some flexibility and does not permit changes to the schedule or to its mandated standards." He says he applauds the bill's intent and does not oppose it but prefers his agency's regulation.

Under that regulation, 20 percent of passenger trucks manufactured after Sept. 1, 1994, must be equipped with air bags or automatic belts. This increases to 50 percent of those manufactured after Sept. 1, 1995; 90 percent after 1996; and all vehicles after Sept. 1, 1997.

Manufacturers may install either air bags or automatic belts on the driver and passenger side. But during the phase-in period, manufacturers who install air bags on the driver side may settle for manual belts on the passenger side.

Air bags are becoming the manufacturer's choice in passenger cars.

Curry describes that provision as an incentive to install air bags instead of automatic belts. "We encourage manufacturers to install air bags because, when used in combination with lap and shoulder belts, they offer the best protection available," he says. Senators supporting the proposed legislation say the $200 that air bags add to the cost of each new car is well worth it. "The single most important vehicle improvement we can make to save lives and prevent injuries is to require air bags in all cars and light trucks," says Sen. John Danforth, R-Mo.

Sen. Richard Bryan, D-Nev, chairman of the Senate Commerce Subcommitte on Consumer Affairs, says "Air-bag equipped cars are unquestionably safer" than those using automatic seat belts. The bill's sponsors said it would be better to put the air-bag requirement into law than to wait for the agency or the auto industry to act, perhaps putting bags only in larger cars.

"We don't believe that the size of an individual's paycheck ought to determine whether he or she is protected by a device which is available," says Bryan.

Here's a round-up of NHSTA activity in other areas:

Fuel Economy Vs. Safety

The fuel economy versus safety battle continues to play out in Washington. The administration and major automakers oppose a Senate bill which forces the auto industry to sharply increase fuel economy.

The bill, sponsored by Sen. Richard Bryan, requires automakers to improve the gas mileage of their new-car fleets — all the cars they manufacture in one year — by 40 percent by the year 2001. There is now an across-the-board minimum fleet average of 27.5 mpg, although some automakers have higher averages. Under Bryan's legislation, there is no single standard: All automakers would have to improve by the same percentage regardless of their current fleet average.

The bill passed the Senate Commerce Committee on a 14-5 vote. The same panel approved it last fall, but opponents prevented it from reaching the floor. Some critics argue that because automakers have increased fuel economy by making cars lighter, the change has also made them less safe.

Transportation Secretary Samuel K. Skinner says the proposed legislation "could literally destroy the auto industry." He says that he will urge President Bush to veto it if it passes.

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OPENING SESSION

Monday, October 6, 8 - 10 a.m.
New Orleans Convention Center

The National Safety Council celebrates 79 years of service to the nation!

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- Annual Meeting including an address to the membership by T.C. Gilchrest, president, National Safety Council
- Keynote address — First Lady Barbara Bush has been invited to speak.
- Presentation by National Safety Council Chairman John A. Woodhall, Jr.
- Exceptional entertainment!

BLOCKBUSTERS

Motor-Transportation Division and Highway Traffic-Safety Division

Tuesday, October 8, 10:15 - 11:45 a.m.

Intelligent Vehicle Highway System — What's Been Done? — What's to Come?, Session I — An overview of current and future policies designed to improve highway safety and mobility in the future. *James I. Taylor,* Notre Dame; *Thomas D. Larson,* Federal Highway Administration; *William A. Leasure, Jr.,* National Highway Traffic Safety Administration; *James Constantino,* IVHS - America.

Wednesday, October 9, 10:15 - 11:45 a.m.

Intelligent Vehicle Highway Systems — What Tomorrow Will Bring, Session II — The impact of the current IVHS research and implementation projects on the automobile, motor carrier and highway industries. *Stephen F. Campbell,* American Trucking Associations Inc.; *William Spritzer,* GM Research Laboratories; *Douglas McKelvey,* Federal Highway Administration; *Donald Hansen,* Preston Trucking Inc.

COMMERCIAL VEHICLE SECTION

Monday, October 7, 1:15 - 2:45 p.m.

Negligent Hiring — In most states a company may be liable for the negligent entrustment of a vehicle to an incompetent driver. Experts discuss a threatening liability issue affecting all companies who allow employees to drive company vehicles. *Donald V. Capuano,* Baldwin and Lyons Inc.; *Robert E. Corry, Jr.,* Attorney; *Martin Weissert,* Baker & Daniels; *Cynthia Wicker,* American Trucking Associations Inc.

Monday, October 7, 3 - 4:30 p.m.

Safety Rating. . .Profit or Loss — Obtaining and keeping a satisfactory DOT safety rating. Presented from three perspectives: the DOT, the motor carrier and the third party insurance carrier. *Joseph M. Koebert,* Reliance National: *James Feeney,* Motor Carrier Safety Services Inc.

Tuesday, October 8, 1:15 - 4:30 p.m.

OSHA, Worker's Compensation and Your Dollars — A comprehensive overview of the applicable regulations relating to the business operations of distribution centers, warehouses, truck terminals and vehicle maintenance shops. Attendees should be able to return to their organizations and implement programs and procedures aimed at receiving full compliance with these regulations. *William M. England,* McLane Co. Inc.; *Gerard F. Scannell,* Assistant Secretary of Labor, OSHA; *Stephen J. Zeigle, Sr.*, Reliance National.

HIGHWAY TRAFFIC SAFETY DIVISION

Tuesday, October 8, 1:15 - 4:30 p.m.

Utility Pole Problems—*James I. Taylor*, University of Notre Dame; **The Utility Pole Problem**—*Jarvis D. Michie*, Dynatech Engineering Inc.; **Placement of Utility Poles**—*Hays E. Ross*, Texas Transportation Institute; **Model Codes — Potential Changes**—*Daniel S. Turner*, University of Alabama; **Utility Pole Issues — The Utility Companies**—*Dennis M. LaBeile*, Florida Power and Light; **Examples of What Works**—*Don L. Ivey*, Texas Transportation Institute.

Tuesday, October 8, 1:15 - 2:45 p.m.

Solving the Problems Typical of Older and Younger Drivers — Researchers and practitioners compare and contrast the problems of both sets of drivers and examine the most effective remedies. *Gary D. March*, Office of the Secretary of State (Ill.).

Wednesday, October 9, 1:15 - 2:45 p.m.

A Look at Low-Level Alcohol Impact in Various Transportation Modes—Scientific aspects, a major court case, the impact of regulations and simulator studies. *Robert Zettl*, Colorado Dept. of Health; **Pharmacology and Physiology.** *Marcella Burns*, Southern California Research Institute.

Wednesday, October 9, 3 - 4:30 p.m.

Information Systems for Highway Safety—*Clayton E. Hatch*, National Highway Traffic Safety Administration.

DRIVER IMPROVEMENT PROGRAMS

Monday, October 7, 1:30 - 3 p.m.

A Look at the Proposed OSHA Standards for Occupant Protection—The requirements and how to comply. *Master Sgt. Charles Schwarting*, Illinois State Police.

Monday, October 7, 3 - 4:30 p.m.

DDC-8/6 . . . The New Program for the Decade—The program has been completely revised to reflect the new century's changing needs and technology: six new films, new audiovisuals, new instructor's manual and student workbooks. *Dewey Bullard*, New Mexico Driver Improvement Institute; James A. Solomon, National Safety Council.

Tuesday, October 8, 1:30 - 3 p.m.

The Defensive Driving Response for the Municipal Government — Group of new programs geared to the driving concerns of emergency vehicle operators, police, fire fighters and highway maintenance personnel. *James A. Solomon,* National Safety Council; *William Waslick,* FLI Learning Systems Inc.

Tuesday, October 8, 3 - 4:30 p.m.

The Safety Challenge: a New Way to Motivate the Adult Worker — How to use reality therapy and innovative A-V techniques interwoven with familiar tried and true methods of presentation. *Audrey M. Gramstad* and *John J. McCarthy*, National Safety Council.

TRANSIT SECTION

Monday, October 7, 1:15 - 2:45 p.m.

System-Safety Program Plan Applications—System safety's unique application to mass transit, the audit process, hazard resolution, program management and more. *Charles S. Hallock*, Washington Metropolitan Area Transit Authority; *Joseph F. Boscia*, NJ TRANSIT Bus Operations Inc.; *James J. Gigantino*, NJ Transit Bus Operations Inc.; *Albert W. Hartkorn*, Metro Dade Transit Agency; *Frederick L. Mead*, Chicago Transit Authority.

Monday, October 7, 3 - 4:30 p.m.

Accessible Transit for the Elderly and Disabled — A review of the *Americans with Disabilities Act*, standards of accessibility in Canadian transit, wheelchair designs and other types of mobility devices and restraint/securement systems. *Wayne Huston*, Metro Transit (Seattle); *Jerry L. Burke*, Clarendon National Insurance Company; *William P. Grizard*, Regional Transit (Sacramento); *Doug Hartman*, BC Transit (British Columbia); *Thomas J. Rabe*, Greater Cleveland Regional Transit Authority.

Tuesday, October 8, 1:15 - 2:45 p.m.

Alternative Fuels—Fuels being used in mass transit vehicles, design considerations in vehicles and facilities, refueling procedures, storage and safe operation. *John J. Honan*, Toronto Transit Commission; *Robert T. Cox*, Phoenix Transit System; *James J. Gigantino*, NJ TRANSIT Bus Operations Inc.; *Charles F. McCoubrey*, Maryland Department of Transportation.

Tuesday, October 8, 3 - 4:30 p.m.

Marketing Safety Awareness to the Public. *Steve J. Tima, Jr.*, Port Authority (Pittsburgh); *John P. Boland*, Cincinnati Metro; *Thomas D. Boyle*, Chicago; *Gary E. Sutton*, SEPTA (Philadelphia); *Clayton E. Switzer*, City of Calgary Transportation Department.

Wednesday, October 9, 1:15 - 2:45 p.m.

Accident Reporting — Insight into various accident data collection systems. *Santo S. Radice*, Brooklyn, N.Y.; *Joseph F.* Boscia, NJ TRANSIT Bus Operations Inc.; *Richard S. Breeden*, OMNITRANS (San Bernardino, Calif.); *Roger Miller*, Metro (Cincinnati, Ohio).

Wednesday, October 9, 3 - 4:30 p.m.

Role of Safety in Vehicle Maintenance—Different aspects of vehicle maintenance and the interface between maintenance and safety. *James M. Dougherty*, Greater Cleveland Regional Transit Authority; *Judy A. Martin*, Southwest Ohio Regional Transit Authority; *Wayne McKinnon*, Ottawa-Carleton Regional Transit Commission; *Roland Widman*, Regional Transit Service Inc. (Rochester, N.Y.).

FLEET ADMINISTRATOR SECTION

Monday, October 7, 1:15 - 4:30 p.m.

Will the Regulations Drive You Crazy? — How future regulations may impact you and your organization. *Cameron H. Speck*, Consolidated Services Corp.; *Gerard F. Scannell*, Assistant Secretary of Labor, OSHA; *J. Paul Hubbard*, Imperial Tobacco Ltd.; *Chuck Hurley*, Insurance Institute for Highway Safety; *Col. Tom Rice*, Ohio State Patrol.

Tuesday, October 8, 1:15 - 4:30 p.m.

Let's Build a Bridge! — Professionals representing risk management, safety, fleet management, sales and human resources discuss the importance of communication. *Penny Levin*, PAL Productions Inc.; *Terry Turpin*, National Association of Independent Insurance; *Ron Judd*, Risk and Insurance Management Society.

Wednesday, October 9, 1:15 - 2:45 p.m.

What Do Vehicle Accidents Really Cost? — Understanding the true economic impact of a motor-vehicle accident on your organization. *George W. Moultrie*, Northern Plains Natural Gas; *Justs Grinvalds*, Mandarim Associates Inc.; *Milt Umbenhouer*, Johnson & Johnson; *James P. Kaletta*, National Safety Council.

SCHOOL TRANSPORTATION SECTION

Monday, October 7, 1:15 - 2:45 p.m.

Alternative Fuels for School Transportation. *Carlisle Beasley*, Metro Nashville Schools; *Wilbur C. Rumph*, Blue Bird Body Company.

Monday, October 7, 3 - 4:30 p.m.

Emergency Preparedness for Natural Disasters. *Nancy Schulz*, Mayflower Contract Services; *Jeff L. Shultz*, Georgia State Patrol.

Tuesday, October 8, 1:15 - 4:30 p.m.

Hands-on Driving. This session will be held aboard a school bus. Learn what to look for in a professional driver and more. *Lynn N. Degenhart*, Helweg & Farmer Transportation Company Inc.; *Richard E. Fischer*, Trans-Consult.

Wednesday, October 9, 1:15 - 2:45 p.m.

Labor Negotiations/Relations. The discipline of employees according to company/school district policy and according to federal standards. *James M. Randall*, Springfield City Schools; *Jerry Downing*, Mayflower Contract Services.

Who's Four-Wheel Drive For?

IN-NJ 66
WOB-SJ 23
D

By Sherree Geyer

Rain, sleet and snow — common driving inconveniences — pose real driving dangers to many motorists, particularly the operators of rear-wheel-drive vehicles.

Standard equipment on most conventional cars, rear-wheel-drive provides limited gripping and stability during bad weather or on treacherous roads. Poorly paved surfaces, including gravel or muddy rural roads, provide little traction to drivers.

To protect motorists against driving dangers, many automakers now offer four-wheel drive or all-wheel drive in place of the more traditional rear-wheel or front-wheel drive. Front-wheel drive — almost as common in cars as rear-wheel drive — offers driving safeguards similar in nature to 4x4. While rear-wheel drive pushes the car, front-wheel drive pulls it. The tugging capability — coupled with front-end weight distribution — provides significant traction.

Four-wheel/all-wheel-drive systems provide independent power to each wheel. The added power provides greater stability, traction and cornering ability. While all-wheel drive operates automatically, four-wheel drive functions on demand via a control switch within the car.

Once only on Jeeps and race cars, 4x4 capability now frequently appears on passenger cars. While manufacturers maintain that four-wheel and all-wheel drive provide peace of mind to safety-conscious motorists, critics claim their advantages benefit only a small segment of the driving public.

Industry officials classify 4x4 as an active safety system. They group it with a growing list of auto devices including active suspension, electronic traction assistance and anti-lock brake systems.

From its primitive start, 4x4 engineering offered manufacturers al-

All-wheel-drive vehicles give drivers improved traction on slippery, winter roads.

most limitless possibilities. Applied to 1940s-made military utility vehicles, four-wheel drive allowed soldiers to traverse all types of terrain without bogging down in mud, sand or snow.

Later, with the introduction of the 4x4 sport utility, civilians turned to the American pastime called off-roading. Further down the road, four-wheel drive's superior cornering ability provided a leading edge for competitive drivers. State-of-the-art specialty cars proved a winner at the race track.

Today, virtually all automakers make some form of 4x4 available to consumers. From practical pickups to flashy sports cars, the technology has driven beyond the bounds of its original uses. Mini-vans — Detroit's and Japan's answer to the family station wagon — and even sport coupes offer four-wheel/all-wheel-drive capability.

America's family cars present a final frontier to 4x4 engineering. With many car owners now as concerned with auto safety records as car style, automakers must balance looks and comfort with safety.

To provide increased driving security, more and more manufacturers include four-wheel/all-wheel drive as options. Currently, 15 foreign and domestic car makers offer the capability on 23 models. Industry experts predict continued expansion.

Advantage or Hype?

From air bags and three-point safety belts to anti-lock brake systems and four-wheel drive, automakers recognize that safety sells. When they promote 4x4 as a safety rather than a performance option, manufacturers convince consumers of its safety benefits.

While automakers sing the safety praises of four-wheel/all-wheel drive, many industry experts give it a qualified nod. They say the feature, which exhibits superior capability during extreme driving conditions, benefits but a small segment of the motoring population.

Jason Vines, of Chrysler Corporation, firmly believes in the safety merits of 4x4. A favored feature on Chrysler's mini-van fleet and two of its sport coupes, all-wheel drive enjoys a popularity among female car shoppers, he says. Vines, who ranks 4x4 alongside air bags and anti-lock brakes, believes increased traction gives a driver more confidence.

"You'll never get me to say anything negative about all-wheel drive," Vines says. "It doesn't have to be slick or rainy for all-wheel drive to show you that it's good."

Foreign auto manufacturers, equally enthusiastic about 4x4, share Vines' view. Joseph Bennett, of Audi, says all-wheel drive eliminates the "white-knuckle" ride of conventional rear-wheel-drive automobiles and increases driver security. The German car maker produced its own version of all-wheel drive, called Quattro, in 1980 and now offers it on all its high-end sedans.

Bennett says all-wheel-drive cars have better on-highway safety records than rear-wheel-drive cars. All-wheel drive contributes to active safety, plus it provides drivers with added assurance on rough roads.

However, some auto experts hesitate before giving thumbs up to 4x4. Although regarded as a driving advantage, the capability provides greatest assistance to motorists based in unfavorable [for driving] regions.

"Given the wide range of driving conditions in America, I don't think all-wheel drive offers a plus that's outstanding. In northern areas, where snow covers city streets and highways for a large part of the year, it becomes a significant option and real advantage," notes Milford Bennett, assistant director of automotive safety engineering for General Motors Corporation.

You'll never get me to say anything negative about AWD. — Jason Vines

Jerry Ralph Curry, administrator of the National Highway Traffic Safety Administration, cautions

This all-wheel-drive train automatically adjusts to reduced traction conditions.

consumers not to expect a security blanket of protection from their four-wheel-drive autos. The capability, which fails to increase stopping ability on snow or ice, exhibits roll-over tendencies in vehicles with high centers of gravity. Rollover, a problem with 4x4 pickups and utility vehicles, came to light with the 1988 investigation of the Suzuki Samurai.

Safety Is Costly

Though 4x4 edges its rear-wheel-drive cousin in road handling and stability, the costs may outweigh the benefits. With the high performance comes an equally high price tag. Experts estimate that four-wheel/all-wheel drive adds between $750 and $1,200 to the sticker price of most automobiles. On luxury sedans, this option skyrockets to between $2,400 and $6,000.

The cost further taxes consumers by placing a burden on auto operating expenses. Chicago-based foreign auto mechanic Rolf Maag calculates that 4x4 systems cost four to five times more than rear-wheel drives to repair and maintain.

The complicated systems, which require the precise alignment of two drive trains, raise parts and labor charges. The drive trains, estimated at 500 to 800 pounds, also drain gas mileage by 10 percent and reduce tire-tread life from 40,000 to 30,000 miles, he says.

Maag, who advises prospective car buyers to think twice before purchasing a 4x4 auto, believes the money is best spent on other active safety systems. "All-wheel drive is a waste of money because 90 percent of the people out there don't need it. They'd be better off investing that money in an anti-lock brake system. That's the best thing that's come along in 15 years."

Driver-awareness Is the Key

While experts debate the pros and cons of four-wheel/all-wheel-drive capability, they say that a motorist's attitude and skills provide the best defense against driving dangers. An ounce of prevention may be more effective than all the active and passive safety systems combined.

"Do you need four-wheel drive in a car?" asks Joseph Bennett. "No. You need to know how to drive safely. All-wheel-drive may give you an extra active safety edge, but ultimately it's up to the driver to take responsibility."

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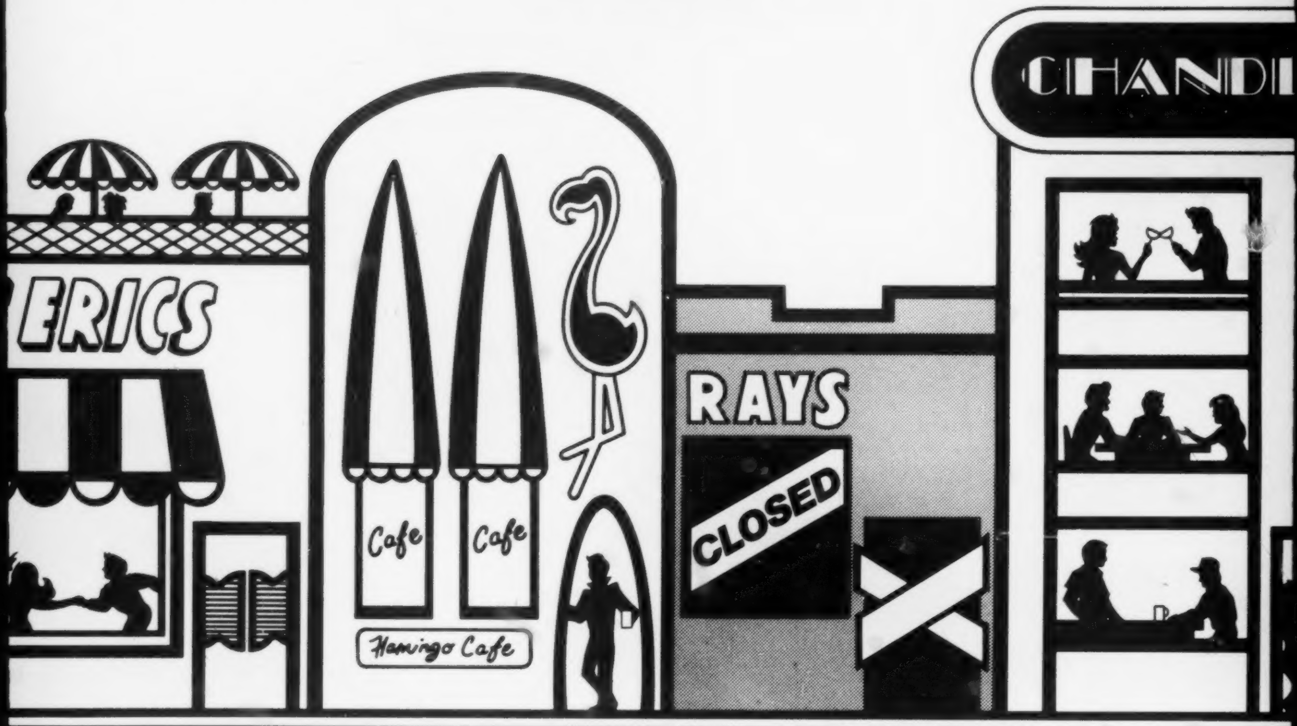

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GREEN CROSS FOR SAFETY ***National Safety Council***

Lawsuits Confound Highway Agencies

The nation's inherent belief in the right to travel is being paralleled by another inherent belief — the right to sue.

By Daniel S. Turner

Years ago, Americans felt privileged to have a vehicle and assumed to travel at their own risk. For example, at one time people considered themselves fortunate to drive within a few days after a major snowstorm.

More recently, the public wanted to commute during a big snow. And today, highway agencies control snow and ice so well that drivers expect to be able to drive during a storm at or near normal speed. Americans have come to feel that they have a "constitutional right" to travel. And transportation agencies now suffer the consequences of that "right."

Transportation agencies acknowlege the responsibility for providing and maintaining safe highways. However, our society holds these agencies accountable for safe, posted-speed travel and *under all conditions.* Consequently, highway agencies have seen a spiraling increase in the number of law suits that allege the agencies caused or contributed to traffic accidents.

What specifically is happening? A highway collision occurs. An individual involved in the mishap feels that a tort, a civil wrong or injury, has contributed to the crash. That person's attorney then files a tort action, or civil suit, against the highway agency and seeks repayment for damages.

What types of claims are being filed, and what is projected for future trends? One can search the law libraries, case-reporter books and attorney's journals to uncover the types of suits, verdicts and individual cases, but what is the national picture on the problem?

The King Cannot Be Sued

Since the early 1800s, government in the United States worked under the principle that it could not be sued. This concept was borrowed from William the Conqueror. In 1066, William, then king of England, created the principle of "sovereign immunity" when he refused to allow the common people to make him the subject of court action.

The first recorded case of sovereign immunity was in 1788 in the town of Devon (now Devonshire), England. (Trivia buffs may be interested to know that Devon is the setting of Sherlock Holmes' *Hounds of the Baskervilles.*) Russel's horse and wagon fell through a defectively maintained bridge — his goods were lost, and his horse was killed. Russel sued the town and lost: Since the men of Devon operated under the authority of the king, the court ruled that they could not be sued.

Efriam Mower of Lester, Mass. made the first attempt to sue for poor road maintenance in the United States. In 1812, Mower's stagecoach fell through a defectively maintained bridge. His goods were lost, his horses had to be destroyed, and Mower was injured.

Mower sued the town of Lester, and he too lost. The Massachusetts court referred to Russel's case 24 years earlier in England. ". . .The town of Lester," the court concluded, "operates under the ruling sovereign—the sovereign state of Massachusetts . . ."

U.S. courts and legislatures began to remove sovereign immunity in the 1960s. By the late 1970s, sweeping legal changes suddenly found transportation-agency managers without their blanket of protection. In state after state, substantial numbers of suits were filed against government agencies and officials.

Surveys Show Trends

To gain a picture of sovereign immunity and tort suits in America, questionnaires were sent to state agencies over a period of years by the American Association of State Highway and Transportation Officials' Administrative Subcommittee on Legal Affairs.

AASHTO's subcommittee published the results in 1978, 1979, 1981, 1983, 1987 and 1988. Year-to-year findings were compared to identify trends.

The accuracy of self-reported surveys are limited. For example, not all states responded to each survey. To predict a truer number of cases had all states reported, a mathematical formula was used. And both conservative and liberal estimates were made.

Another limit to the results is that only state highway agencies were surveyed. The reports do not cover local government highway agencies or public-works departments, though they are frequently involved in tort suits.

The number of states reporting full sovereign immunity had dropped to 16 by 1978 (31 percent of those reporting). By 1988, only 18 percent of the states reported having full sovereign immunity.

Another trend revealed is a shift to limited immunity. As states surrendered sovereign immunity, many tried to limit the number or types of suits, often in the form of a tort claims act.

These acts typically established the grounds upon which a suit might be brought. They provided a cap on the amount of award to a plaintiff, instituted a rigid claims procedure to discourage frivolous suits, or otherwise gave limited protection to the government and its employees.

Law Suits Skyrocket

Tort claims filed against state transportation agencies between 1972 and 1987 show the largest total in 1987 with 21,165 reported claims. At least seven states had 1,000 claims. Two states, California and Pennsylvania, bore over 5,000 claims.

The total claims reported each year is shown in Figure 1. The figure also reflects incomplete responses. Note that between 1972 and 1980, the reported number increases like a compound-interest curve.

Due to a lack of reporting, the count drops considerably between 1980 and 1982. And the annual number of suits stay at lower levels through 1987. Conservative and liberal estimates bracket the expected range, shown in Figure 1. Reported cases increased approximately 1,200 percent in 15 years. This is a compound growth of about 19 percent over the reporting period.

No wonder the problem confounds highway-agency managers. If these suits were against some specific type of industry, a growth rate of 19 percent per year for an extended period would attract continuous headlines. And top management experts would devote concentrated efforts to attacking the problem. Unfortunately, transportation leaders have not responded as promptly as private industry.

The problem not only continues to exist, it continues to grow at 19 percent per year!

Pending Claims Accelerate

Claims which had not yet been resolved were also covered by the surveys. In 1983, at least five states faced more than 1,000 pending claims. More than 10,000 pending tort suits reported in that year by 45 states represented $6.8 billion in claims.

The values had increased by 1988. Twenty-six states reported more than 20,500 pending suits worth $15.3 billion. The national picture of numbers and dollar amounts of pending cases is shown in Figure 2 (See page 26.).

This figure shows a continuous upward climb (the same pattern as the number of claims) in total cases waiting in state courts and claims bureaus. The number of pending claims quickly increased to more than 250 percent of its former value, creating a 20,567 case backlog in 10 years.

The dollar value of pending claims is also shown in Figure 2. It is virtually parallel to the data for the number of claims, moving ever upward. The $15.3 billion in pending claims against state transportation agencies in 1988 represents an increase of 500 percent in a short period. This value was reported in a year when only half of the states responded to the survey.

Since all states did not report pending claims, maximum and minimum estimates were made. It is estimated that 1) the number of currently pending claims fell somewhere between 23,400 and 35,300; 2) approximately 29,500 suits were pending against state highway departments in 1988; and 3) the dollar amounts of these suits ranged from $16.89 billion to $20.1 billion.

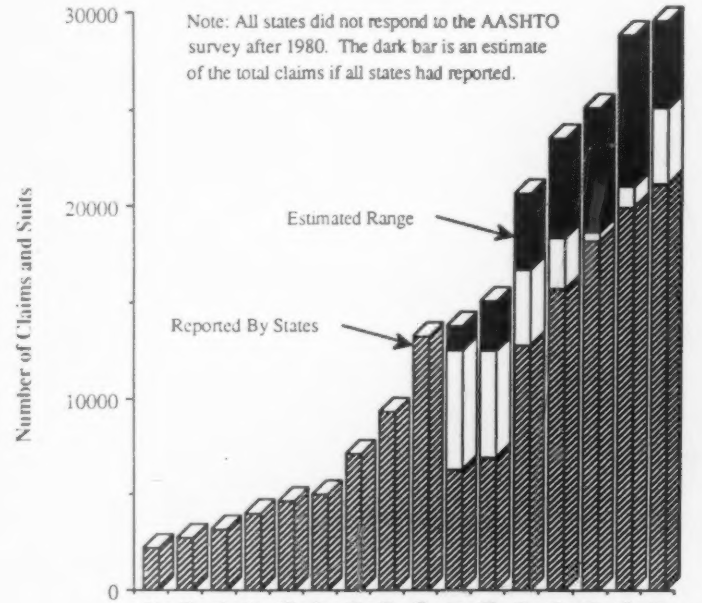


Figure 1: Number of Claims

Figure 2: Pending Claims

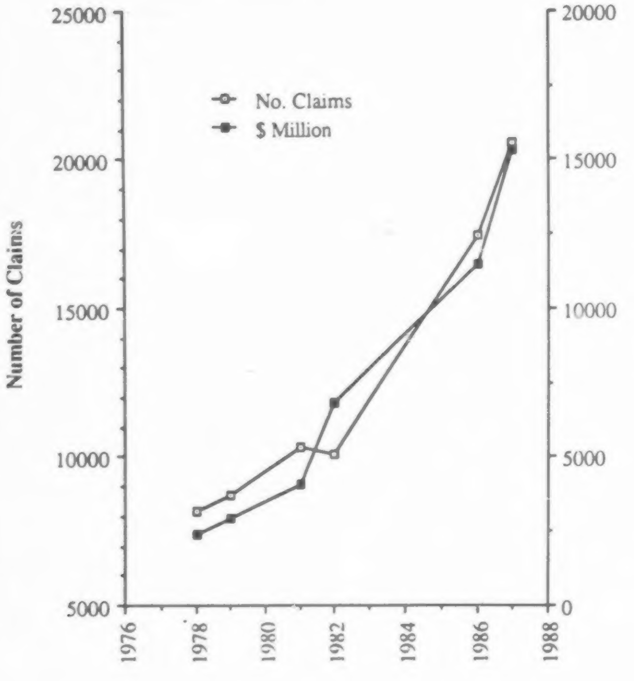
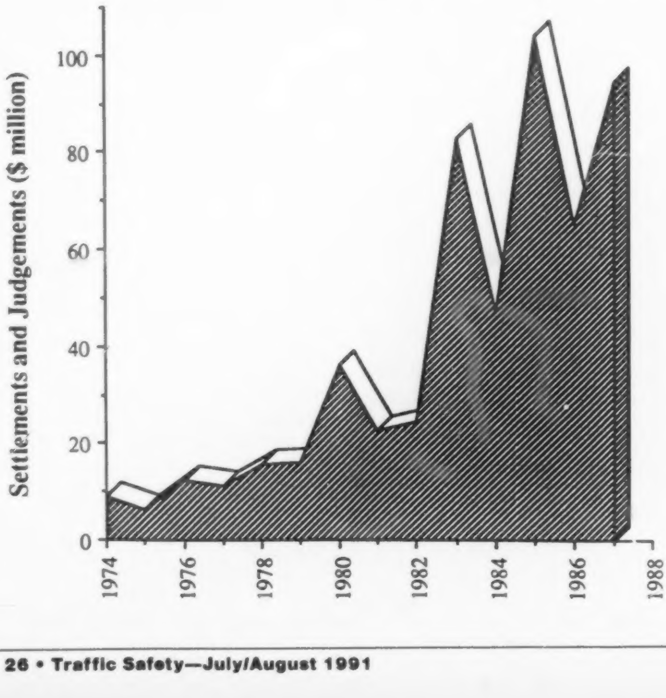


Figure 3: Reported Settlements and Judgements Against State Transportation Agencies



Even when the most conservative estimate is used, the number of pending claims is overwhelming. The value reported by the states for 1988 exceeds all U.S. Department of Transportation funds available to state governments in a typical year.

Fortunately, the amounts that states actually pay in judgements and settlements are usually far less than the face value of the claims. Because of the court system's function, financial losses normally occur many years after the suit is filed. Therefore, it is impossible to tell what percentage of suits filed today will be lost when they finally come to court. Even so, the close correlation between the number of pending suits and the dollar value of these suits makes it possible to forecast the future trend.

Losses Are Steep

Payments by state transportation agencies for settlements or judgements of tort issues are shown in Figure 3. The figure gives the actual values reported by the states. The most recent years are severely under-reported. The general shape is familiar now. Losses zoomed from a low of $6,297,000 in fiscal year '75 to a high of $104,243,000 in fiscal year '85. At least 15 states lost more than a million dollars in a single year during the reporting period. Six states lost $10 million or more in at least one year. The largest reported loss was $45 million by Louisiana in 1985.

Settlements and judgements typically occur several years after the initial claims are filed, especially for those cases involving the largest sums of money. The most difficult cases filed in 1983 might not have been resolved in time to be included in the figure.

If the eventual losses could be plotted in the years the claims were filed, the slope in Figure 3 would be even steeper. Highway agencies will be feeling the financial impact of today's claims many years into the future.

Losses by all states were estimated to total more than $150 million in settlements and judgements in 1987. The total cost of defending these cases is not known. But in 1985, eleven states reported direct defense expenses of $17 million.

A logical estimate is that the 50 states spent up to $50 million for direct and indirect costs for these suits and claims. This brought the 1987 total costs (defense, settlements and judgements) to approximately $200 million for state transportation agencies.

National experts feel that tort losses of local governments are probably parallel to those of state governments. This means that an additional $200 million was probably spent at the local government level on suits.

Why Suits Vary by State

The first step toward managing the transportation liability problem is understanding the types of suits and their causes. Then, a management program can be designed to eliminate or minimize the causes.

The types of claims are shown in Table 1. It shows that suits vary considerably from state to state, and for good reasons. First, the state road systems reflect local geography and topography, the amount of finances available for roads, and management decisions made by highway agencies many years ago.

For example, a highway department may have conserved funds during its early years by constructing state highways of minimum width with minimum shoulders. Today, that same agency could be facing suits alleging poor roadside safety conditions.

A second state may experience a rash of suits based upon narrow bridges built decades ago. Another state could have insufficient funds to conduct a thorough maintenance program. This state could be encountering many "pothole" suits.

Another reason for little uniformity in tort actions against state highway agencies may be terminology. One state may classify a case under the heading of "insufficient warning," while another state might call this same type of a suit a "missing sign."

The person who classifies the suit may be a law-office clerk who has little understanding of transportation functions. Even if the claim is classified correctly, a jury may make its decision based upon one of many subordinate issues. The jury may rule for the plaintiff in a low-shoulder case based upon a feeling that there was insufficient warning for the driver. This could be classified as either type of case.

Table 1: Top Claims for Five State Transportation Agencies.

TYPE CLAIM	PERCENTAGE OF TOP FIVE CLAIMS				
	Colorado	Florida	Idaho	Oklahoma	Texas
Design	11%	5%		2%	21%
Signs/Signals	6%			2%	22%
Flying Objects		31%	39%		
Slip and Fall		28%			
Insufficient Warning		18%			
Road Surface		10%		30%	34%
Pothole		8%			
Snow Plow			18%		
Improper Maintenance			18%		4%
Construction Zone					19%
Department Vehicles				66%	
Other	83%		25%		
TOTAL	100%	100%	100%	100%	100%

A further reason why there might not be uniformity from state-to-state has to do with the variety of state legal systems. Some states require that all claims go through a claims bureau before any other action is taken. The claimant may have to file the suit under one of several uniform headings.

The type of claim may be the choice of a plaintiff's attorney. Once an attorney wins a large judgement in a case involving a construction zone warning sign, the attorney may decide to specialize in similar accidents. The results of any winning case will probably be published in a plaintiff attorneys journal. And this may cause other attorneys to look for similar cases.

Though there is little consistency from one state to the other, it is possible to draw conclusions when national data is considered. Several types of suits show up prominently in the most expensive cases. These include narrow bridges; high-accident locations; work-zone traffic-control devices; fixed objects in the clear zone; low shoulders or edge rutting; missing or malfunctioning traffic-control devices; insufficient warning and insufficient sight distance.

What Does the Future Hold?

Every aspect of the tort issue indicates that no end is in sight. The number of cases filed, the suits pending in the courts, and financial losses are all increasing rapidly. The historical growth rate (19 percent per year) unfortunately appears to be an apt projection for the future.

The 1987 "big picture" becomes a $400 million tort liability situation in America. The tort issue has been growing at the annual rate of 19 percent per year for the past 15 years. This presents the frightening future perspective of transportation agencies consumed by debts generated in the court system. ●

Daniel S. Turner is professor and head of the civil engineering department at The University of Alabama, Tuscaloosa, Ala. Dr. Turner is a member of the National Safety Council Committee on Roadway Environment.

NEW PRODUCTS

Create Safer Work Zones

WORK ZONE VIDEO

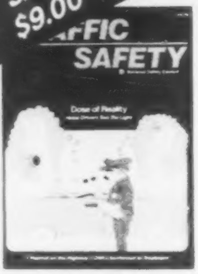
The Thin Orange Line, a two-part videotape training program for construction inspectors from the American Traffic Safety Services Association, shows how highway agencies can do a better job.

Part one introduces the basic principles of work-zone traffic control, stresses compliance with the MUTCD and the traffic-control plan and acquaints viewers with the basic design of traffic control for construction and maintenance activities.

Part two emphasizes the proper selection, placement and maintenance of traffic-control devices. It also takes the viewer through a series of critical inspection points. An eight-page inspector's guide recaps and expands on points made in the video. Twenty-five copies of the guide are included with each videotape order. — **ATSSA,** 5440 Jefferson Davis Highway, Fredericksburg, VA 22407.

BOOK ON FUTURE AUTO TECHNOLOGY

Published by the Society of Automotive Engineers, *Automobile Technology of the Future* provides an in-depth look at forthcoming trends in engines, transmissions, electronics, alternative fuels, quality, safety, styling, aerodynamics, chassis and traffic flow. Numerous photographs, charts, graphs and illustrations complement this examination of the future of automobiles. This book is for readers with both technical and general interests. — **SAE,** Dept. 2420, 400 Commonwealth Dr., Warrendale, PA 15096.



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REDUCE TRUCK INJURIES

A back-injury-prevention video, *Back Safe for the Professional Trucker,* focuses on the causes and prevention of disabling back, joint and muscle injuries which plague truck drivers. The video identifies and illustrates activities and procedures to reduce injuries. — **Industry Education Resources,** 2460 Mission St., Ste. 203, San Francisco, CA 94110.

MICROCOMPUTER MAGAZINE

PC-TRANS, a new bimonthly magazine, addresses microcomputing as it concerns the transportation professional. Each issue includes guest-writer advice based on lessons learned from microcomputer use, transportation software reviews, new software and software updates, a graphics technology column, and a column to help readers understand the basic and not-so-basic functions and capabilities of their microcomputers. — **PC-TRANS,** 2011 Learned Hall, Lawrence, KS 66045.

TRAFFIC CONTROL VIDEO

Safe, Efficient Lane Closure assists street and road maintenance crews in creating safer work zones. The 10-minute video addresses proper procedures and standards for closing traffic lanes and directing motorists through the work area.

Written and directed by transportation engineers and approved by the U.S. Department of Transportation Federal Highway Administration and the American Traffic Safety Services Association, the video encourages street crews to follow federal and state traffic-control guidelines. — **Arrow Sign Company,** 440 S. Arden Blvd., Los Angeles, CA 90020.

More Taxes or Tolls?

Readers merge on some toll-road issues.

Due to a new federal transportation policy, "user fees" are encouraged to pay for new roads and bridges. As the number of toll roads and toll booths increase, there are concerns over the safety hazards the collection points create.

Traffic Safety readers, responding to a recent survey, nearly all agree in their opinion that toll booths do indeed present dangerous situations.

"Toll booths should be completely eliminated," an Idaho reader writes. She says they are a nuisance to traffic flow and cause congestion. Idaho doesn't have toll roads. According to the reader, the road system works better in Idaho than in states that do have toll roads. "User fees should come from gasoline taxes and vehicle registration."

From the Division of Police, Richmond, Va., "Toll booths are a traffic hazard in and of themselves."

Change the Design!

A school transportation-department employee from Spring Valley, N.Y., suggests a change in toll-booth design. "Changing lanes to get into the correct lane is one of the biggest problems we have," she says. A bridge on the New York Thruway has truck lanes, commuter-ticket lanes and two or more vehicle lanes. Since the toll booths are set up in regular traffic lanes, "not knowing what lane you are headed for is a problem." She points out that if each toll booth collected tolls for every situation, this would prevent last-minute lane changes.

"Use logic, not barriers — get traffic off the road and out of harm's way, *then* collect the toll," says another New York reader. He emphasizes that tollway exits are the safest place to pay tolls.

When toll booths were installed on the Garden State Parkway, a New Jersey reader writes, they were poorly positioned. "It is impossible for drivers to stay in the same lane when they approach the booths." They must move sideways to get their vehicles next to the booths, he says. "This increases chances for collisions."

In addition, New Jersey has tokens and tokens-coins lanes. To entice drivers to use tokens, those booths are placed in the center lane. Most drivers do not have tokens and must change lanes to get to the proper booth.

"The problem is worse on weekends," he says, "when the Parkway Authority changes the positions of the signs." The switching does not affect tourists who don't travel the parkway every day. But frequent travelers are often in what they think is the correct lane and must change quickly. "Frankly, I think the Parkway Authority's procedures increase the possibility of accidents," he says.

One Is One Too Many

An Ohio driver trainer says that in recent years his state had one accident directly related to a toll barrier. "Even one accident that can be attributed to toll barriers is one accident too many."

Not everyone feels the same way about the subject. An employee at The John Hopkins University Applied Physics Laboratory claims to be a toll-booth fan. Sometimes the booths can be "a welcome respite from the boredom of interstate travel."

From South Florida Water Management District, a reader calls attention to an accident on Florida's turnpike. Exiting traffic had backed up to the blind side of an overpass. "An approaching semi [trailer]," the reader says, "rear ended backed up vehicles resulting in fire and fatalities."

How Bad Are They?

Another survey question asked if road and bridge conditions were bad enough to justify building new toll systems even if there might be more collisions. Most readers said "no" or they were undecided about the issue.

A third question asked readers if they are willing to pay higher gasoline taxes for new, toll-free roads. *Traffic Safety* received an almost equal number of yes, no and undecided responses. "Higher user fees such as gasoline taxes are far preferable to toll roads, especially on interstates," says one reader.

"Dedicated funds, proper budgets, use of fuel taxes in meeting other needs, politics — it's not a simple issue," answers another reader. He suggests that how it is handled will vary with the policies and politics of each state.

"On occasion, the gasoline tax is unfair to the driver," writes a New York reader. "Why should people who do not travel toll highways pay for their upkeep?"

Too close for comfort: A Texas reader says that congestion on highways in Houston is inexcusable for a major city. "Each time I stop on the Sam Houston Freeway at a toll booth and look into the rear view mirror, I feel like a swimmer being attacked by a swarm of sharks in a feeding frenzy."

EVENTS

JULY

Vehicular Homicide/DWI Conference — July 7-11, Evanston, Ill. — Northwestern University Traffic Institute, 405 Church St., Evanston, IL 60208. (708) 491-5476; (800) 323-4011.

AUGUST

DDC-8 (Defensive Driving Instructor Development-8) — Aug. 5-7, Chicago; Aug. 15-16, San Francisco — Driver Improvement Programs, National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611-3991. (312) 527-4800, ext. 8527. Western Region Office, National Safety Council, 1111 Triton Dr., Ste. 201, Foster City, CA 94404. (800) 848-5588.

Hazardous Materials/Dangerous Goods Transportation Workshops — Aug. 7-8, Omaha, Neb. — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611-3991. (312) 527-4800, ext. 8407.

DDC-4 (Defensive Driving Instructor Development-4) — Aug. 8-9, Chicago and San Francisco — Driver Improvement Programs, National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611-3991. (312) 527-4800, ext. 8527. Western Region Office, National Safety Council, 1111 Triton Dr., Ste. 201, Foster City, CA 94404. (800) 848-5588.

Illuminating Engineering Society of North America (IESNA) 85th Annual Conference — Aug. 11-15, Montreal — Includes sessions on roadway lighting, visibility and vision. Valerie Landers, 345 E. 47th St., New York, NY 10017. (212) 705-7269.

DDC-ADD (Defensive Driving Instructor Development — Attitudinal Dimensions of Driving) — Aug. 14-16, Chicago — Driver Improvement Programs, National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611-3991. (312) 527-4800, ext. 8527.

DDC-PTD (Defensive Driving Instructor Development — Professional Truck Driver) — Aug. 26-28, Chicago — Driver Improvement Programs, National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611-3991. (312) 527-4800, ext. 8527.

DDC-CTMD (Defensive Driving Instructor Development — Coaching the Mature Driver) — Aug. 29-30, Chicago — Driver Improvement Programs, National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611-3991. (312) 527-4800, ext. 8527.

SEPTEMBER

Hazardous Materials/Dangerous Goods Transportation Workshops — Sept. 11-12, Atlanta, Ga. — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611-3991. (312) 527-4800, ext. 8407.

DDC-ADD (Defensive Driving Instructor Development - Attitudinal Dynamics of Driving) — Sept. 16-18, Houston — Sam Stone, Texas Safety Association, 3834 Spicewood Springs Rd., Austin, TX 78759-8961. (512) 343-6525.

Hazardous Materials/Dangerous Goods Transportation Workshops — Sept. 25-26, Chicago — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611-3991. (312) 527-4800, ext. 8407.

DDC-PTD (Defensive Driving Instructor Development - Professional Truck Driver) — Sept. 26-27, San Francisco — Western Region Office, National Safety Council, 1111 Triton Dr., Ste. 201, Foster City, CA 94404. (800) 848-5588.

OCTOBER

Principles of Fleet Administration Safety — Oct. 1-3, Chicago; Oct. 16-18, San Francisco — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611-3991. (312) 527-4800, ext. 8425. Western Region Office, National Safety Council, 1111 Triton Dr., Ste. 201, Foster City, CA 94404. (800) 848-5588.

12th International Pedestrian Conference — Oct. 2-5, Bethesda, Md. and Boulder, Colo. — Bethesda conference: Ms. Kit Keller, conference coordinator, Pedestrian Federation of America, 1818 R St., N.W., Washington, DC 20009. (202) 332-6986. Boulder conference: Patricia Archibald, conference coordinator, City of Boulder Alternative Transportation Center, P.O. Box 791, Boulder, CO 80306. (303) 441-4260.

Vehicle Dynamics — Oct. 7-11, Evanston, Ill. — Northwestern University Traffic Institute, 405 Church St., Evanston, IL 60208. (708) 491-5476; (800) 323-4011.

DDC-ADD (Defensive Driving Instructor Development - Attitudinal Dynamics of Driving) — Oct. 16-18, Austin, Texas — Sam Stone, Texas Safety Association, 3834 Spicewood Springs Rd., Austin, TX 78759-8961. (512) 343-6525.

VNIS '91 (Vehicle Navigation & Information Systems, International Conference) — Oct. 20-23, Dearborn, Mich. — VNIS papers: Dr. Steven E. Underwood, University of Michigan, 4110 EECS, Ann Arbor, MI 48109-2122. (313) 764-4333. VNIS '91 exhibits: Dr. Mark Krage, GM Research Labs, Dept. 18, 30500 Mount Rd., Warren, MI 48090-9057. (313) 986-2976.

Hazardous Materials/Dangerous Goods Transportation Workshops — Oct. 23-24, Southfield, Mich. — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611-3991. (312) 527-4800, ext. 8407.

DDC-4 (Defensive Driving Instructor Development - 4) — Oct. 26-27, San Francisco — Western Region Office, National Safety Council, 1111 Triton Dr., Ste. 201, Foster City, CA 94404. (800) 848-5588.

Motor Fleet Accident Investigation — Oct. 28-29, Chicago — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611-3991. (312) 527-4800, ext. 8425.

Work Zone Deaths: What Are the Answers?

Solutions must be found for these high-risk areas.

An article in this issue points out that work-zone deaths have increased steadily over the last few years. Most future road work will involve maintenance rather than new construction. So the problem is likely to increase.

Federal and state officials are trying various ways to reduce the deadly statistics. These solutions include double fines for traffic violations in work zones, overtime pay for off-duty police to monitor traffic speed; and attempts to post warning signs only when work is actually in progress.

Interest in work-zone safety is becoming widespread. What do you think? Is tougher police enforcement the answer? Or the use of off-duty officers? When should they be used, and where should they be located? Can public trust be built by attempts to make sure that work-zone signs are in place only when workers are actually present?

After answering these questions, you can tear out this page and send it in. Or if you share your copy of *Traffic Safety* with others, you may want to photocopy the page. Then if we haven't provided enough space, you can write additional comments on the back.

The results will be published in a future issue. Mail your responses to:

Traffic Safety Survey
National Safety Council
444 N. Michigan Ave.
Chicago, IL 60611

	Yes	No	Undecided
1. Do you favor stiffer fines for speed violations in work-zone areas than in other areas of the highway?			
2. Do you think off-duty police should be used on an overtime basis to monitor work-zone traffic speed?			
3. Should work-zone areas be designed so that drivers would not be required to slow down?			
4. Do you think motorists would be more likely to slow down if work-zone signs were kept current and indicated the true situation ahead?			
Comments:			

LIBRARY

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Hingson, R. H., Howland, J., Schiavone, T., "The Massachusetts Saving Lives Program: Six Cities Widening the Focus from Drunk Driving to Speeding, Reckless Driving, and Failure to Wear Seat Belts," *Journal of Traffic Medicine,* IAATM Headquarters, P. O. Box 1644, S-751 46 Uppsala, Sweden. Vol. 18, No. 3, 1990, pp. 123-132.

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Jones, E., *Transportation Safety Training.* 1990. Oak Ridge National Laboratories, Oak Ridge, TN. Order from: NTIS, 5285 Port Royal Rd., Springfield, VA 22161. Report #CONF-900279-1. 10 pp.

Don't keep this magazine!

If there is something in this issue you want to share with a friend or co-worker—but you don't want to part with your copy—go ahead and give the magazine away. We'll reward your generosity by sending you a free, unthumbed replacement copy by return mail (while quantities last). **To receive your replacement copy, just drop a note to:**

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444 North Michigan Ave., Chicago, IL
60611-3991

(Naturally, we'd be happy to hear what it was that you wanted to share.)

STATISTICS

February Traffic Deaths Down 6%

By Mary E. Johnston and Ursula Zuehlke

Motor-vehicle deaths in February totaled 3,030, a decrease of 6 percent from the February 1990 total of 3,220.

Deaths for the two-month period ending February totaled 5,980, a decrease of 11 percent from the 1990 two-month total of 6,700.

Disabling injuries for 1991 are estimated to be more than 215,000. These are injuries resulting in disability beyond the day of the accident, and do not include minor injuries, which probably totaled as many more.

The cost of motor-vehicle accidents for 1991 is estimated to be almost $9 billion.

Based on preliminary vehicle mileage reports for this year, the estimated annual mileage death rate is 1.9 deaths per 100 million vehicle miles traveled.

Notes to Table

Deaths are reported by state traffic authorities. All figures are preliminary. To ensure proper comparisons, 1989 and 1990 figures cover the same reporting period as those for 1991.

States shown in CAPS had fewer deaths in 1991 than they did in 1990 for the same reporting period.

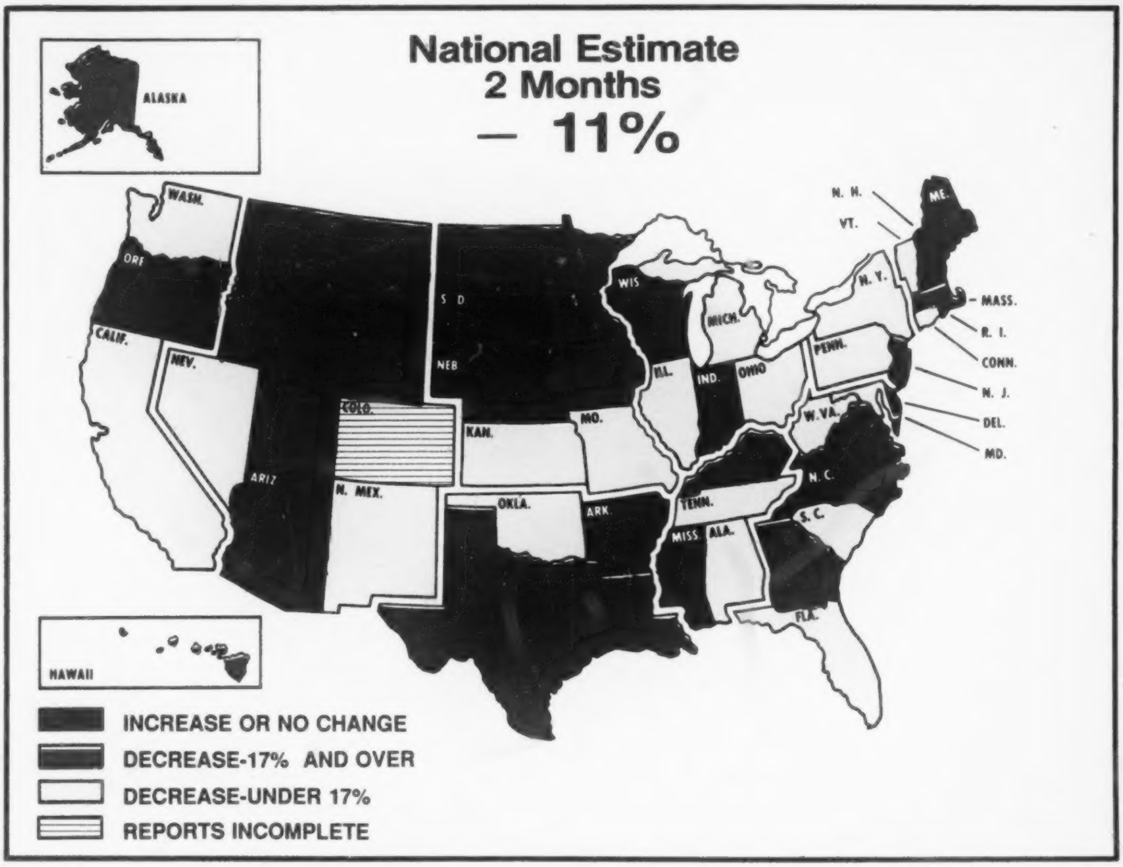
Population Rate: U.S. population rate and state population rates are the estimated annual number of deaths per 100,000 population. U.S. population rate is based on the July 1, 1991, population estimate; state population rates are based on July 1, 1990, population estimates, U.S. Bureau of the Census, Washington, D.C.

Mileage Rate: The number of deaths per 100 million vehicle miles of travel.

State Traffic Deaths

STATE	NO. OF MOS.	DEATHS IDENTICAL PERIODS			PERCENT CHANGES		1991 POP. RATE	1991 MILE. RATE
		1991	1990	1989	1990 TO 1991	1989 TO 1991		
Total U.S.	2	**5,980**	**6,700**	**6,620**	– 11%	– 10%	16.7	1.9
ALABAMA	2	124	145	128	– 14%	– 3%	18.4	1.8
ALASKA	2	8	11	9	– 27%	– 11%	8.7	0.9
Arizona	2	109	100	94	+ 9%	+ 16%	17.8	1.8
Arkansas	2	68	55	77	+ 24%	– 12%	17.4	1.9
CALIFORNIA	2	560	611	723	– 8%	– 23%	11.3	1.3
Colorado	1	27	26	24	+ 4%	+ 13%	9.8	1.1
CONNECTICUT	2	44	51	56	– 14%	– 21%	8.0	1.1
DELAWARE	2	14	25	18	– 44%	– 22%	12.6	1.3
D. of C.	2	9	7	20	+ 29%	– 55%	8.9	1.6
FLORIDA	2	397	455	513	– 13%	– 23%	18.4	2.1
GEORGIA	2	184	225	190	– 18%	– 3%	17.0	1.4
HAWAII	2	17	21	21	– 19%	– 19%	9.2	1.3
IDAHO	2	19	27	14	– 30%	+ 36%	11.3	1.3
ILLINOIS	2	184	200	218	– 8%	– 16%	9.7	1.3
Indiana	2	138	114	125	+ 21%	+ 10%	14.9	1.4
IOWA	2	48	76	51	– 37%	– 6%	10.4	1.3
KANSAS	2	61	69	51	– 12%	+ 20%	14.8	1.8
KENTUCKY	2	94	131	125	– 28%	– 25%	15.3	1.7
LOUISIANA	2	94	125	95	– 25%	– 1%	13.4	1.6
Maine	2	20	17	36	+ 18%	– 44%	9.8	1.0
MARYLAND	2	88	97	89	– 9%	– 1%	11.0	1.5
MASSACHUSETTS	2	56	90	78	– 38%	– 28%	5.6	0.8
MICHIGAN	2	171	176	235	– 3%	– 27%	11.0	1.3
MINNESOTA	2	55	68	54	– 19%	+ 2%	7.5	0.9
Mississippi	2	75	74	109	+ 1%	– 31%	17.5	1.9
MISSOURI	2	122	144	110	– 15%	+ 11%	14.3	1.5
MONTANA	2	15	18	17	– 17%	– 12%	11.3	1.1
Nebraska	2	26	24	41	+ 8%	– 37%	9.9	1.1
NEVADA	2	41	44	16	– 7%	+ 156%	20.5	2.6
New Hampshire	2	21	20	31	+ 5%	– 32%	11.4	1.3
NEW JERSEY	2	108	131	141	– 18%	– 23%	8.4	1.1
NEW MEXICO	2	45	48	84	– 6%	– 46%	17.8	1.7
NEW YORK	2	218	232	271	– 6%	– 20%	7.3	1.2
North Carolina	2	180	178	177	+ 1%	+ 2%	16.3	1.8
NORTH DAKOTA	2	7	10	4	– 30%	+ 75%	6.6	0.7
OHIO	2	181	193	191	– 6%	– 5%	10.0	1.3
OKLAHOMA	2	83	95	85	– 13%	– 2%	15.8	1.5
Oregon	2	75	72	71	+ 4%	+ 6%	15.8	1.7
PENNSYLVANIA	2	227	244	249	– 7%	– 9%	11.5	1.6
RHODE ISLAND	2	5	16	18	– 69%	– 72%	3.0	0.5
SOUTH CAROLINA	2	125	134	140	– 7%	– 11%	21.5	2.1
South Dakota	2	17	15	18	+ 13%	– 6%	14.7	1.5
TENNESSEE	2	135	142	140	– 5%	– 4%	16.6	1.8
TEXAS	2	370	444	431	– 17%	– 14%	13.1	1.4
UTAH	2	25	43	24	– 42%	+ 4%	8.7	1.1
VERMONT	2	13	14	23	– 7%	– 43%	13.9	1.3
VIRGINIA	2	113	158	114	– 28%	– 1%	11.0	1.1
WASHINGTON	2	103	105	61	– 2%	+ 69%	12.7	1.4
WEST VIRGINIA	2	54	55	75	– 2%	– 28%	18.1	2.2
Wisconsin	2	93	85	96	+ 9%	– 3%	11.4	1.3
WYOMING	2	5	9	9	– 44%	– 44%	6.6	0.6
Puerto Rico #	1	45	42	41	+ 7%	+ 10%	16.4	—
Virgin Islands #	2	0	3	4	– 100%	– 100%	0.0	—
		— CANADIAN PROVINCES —						
Alberta	2	52	61	51	– 15%	+ 2%	19.7	—
British Columbia	X							

# Not included in the Total U.S. death count or rates.
X No Report.


National Estimate
2 Months
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S. C.
TENN.
MISS.
ALA.
FLA.
INCREASE OR NO CHANGE
DECREASE-17% AND OVER
DECREASE-UNDER 17%
REPORTS INCOMPLETE

Motor-Vehicle Deaths and Changes
Total U.S.

Month	Deaths 1988	Deaths 1989	Deaths 1990	Deaths 1991	Percentage Changes: Corresponding Month 1989-1991	Corresponding Month 1989-1990	Corresponding Month 1990-1991	4-Month Moving Average + 1989-1990	4-Month Moving Average + 1990-1991
January	3,382	3,530	3,480	2,950	−16%		−15%		− 9%
February	3,129	3,090	3,220	3,030	− 2%		− 6%		− 9%
2 Months	6,511	6,620	6,700	5,980	−10%		−11%		
March	3,595	3,660	3,480			− 5%		− 3%	
April	3,808	3,770	3,850			+ 2%		− *%	
May	4,220	3,910	4,030			+ 3%		+ 1%	
June	4,319	3,980	4,150			+ 4%		+ 1%	
July	4,639	4,390	4,500			+ 3%		+ 3%	
August	4,683	4,370	4,620			+ 6%		+ 4%	
September	4,345	4,170	3,980			− 5%		+ 2%	
October	4,567	4,360	3,980			− 9%		− 1%	
November	4,005	3,800	3,600			− 5%		− 3%	
December	4,386	4,070	3,710			− 9%		− 7%	
TOTAL	49,078	47,100	46,600	45,880[1]		− 1%			

The 1988 figures come from the National Center for Health Statistics. The 1989, 1990, and 1991 figures are National Safety Council estimates.

+ Four-Month Moving Average is based on changes between the totals for four months. For example, the February figure shows the change between the totals for November 1989 - February 1990 and November 1990 - February 1991. Adding several months together tends to smooth out single-month changes that may be affected by differences in the number of weekends in a month from one year to the next or by other random variations.

*Less than 0.5%.

[1] Deaths for the 12-month period ending February 1991.

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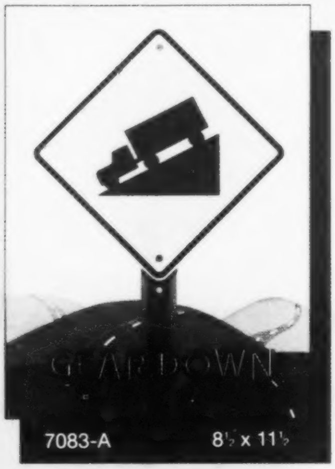

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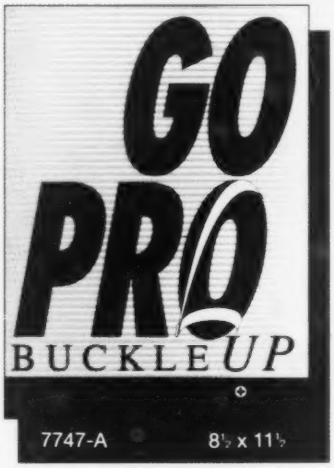

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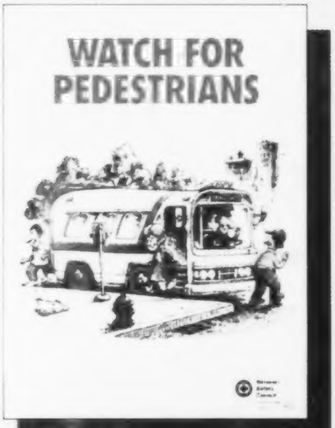

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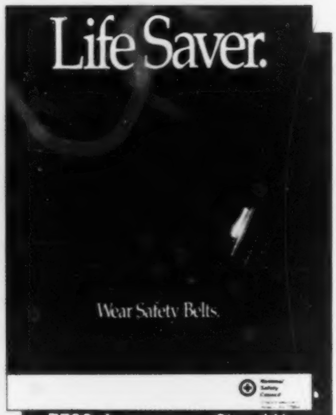

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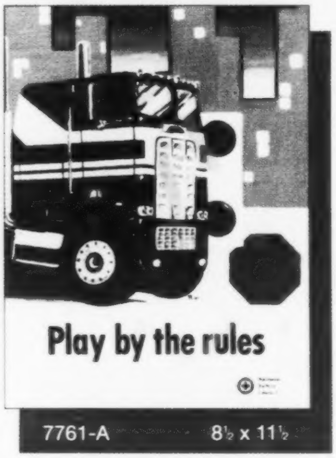

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TRAFFIC SAFETY

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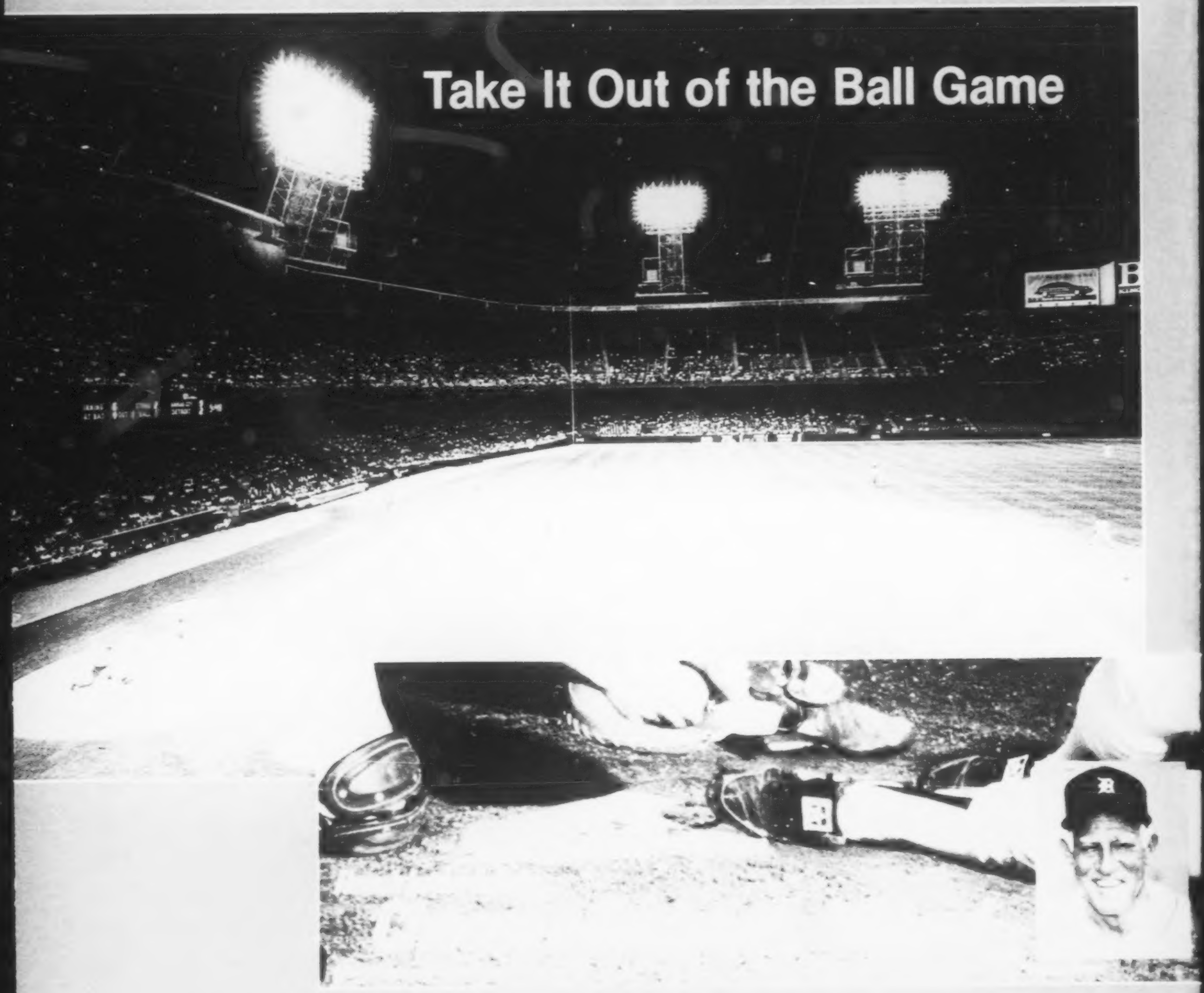

Take It Out of the Ball Game

Motorcyclists Rev Up Safety • Fuel-Tank Research Explodes

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September/October 1991

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TODAY'S TRAFFIC

Safety Is Money in the Bank

According to The Council of State Governments, managers of state-government employees can cut costs by instituting traffic-safety programs. States that overlook the problems of traffic-safety awareness waste millions of dollars each year. They lose money to increased insurance premiums, workers' compensation, sick-leave benefits and worker productivity.

The state of Michigan conducted a recent study. It says that for every dollar spent on safety-belt information and education, an employer can save $105 in accident-related expenses.

The Council, with representatives from seven national associations of state-government officials and executives, legislative leaders and the National Highway Traffic Safety Administration, reviewed and selected 19 programs. They will feature the 19 as innovations in Intergovernmental Highway Traffic Safety Programs.

The programs offer worksite training and education to improve the driving behavior and attitudes of government employees. The focus of several programs is encouraging the use of safety belts and other passive restraints. Others address drunken or drugged driving. Programs include behind-the-wheel training. They also highlight comprehensive driving policies and programs.

New NHTSA Appointments

Jerry Ralph Curry, head of the National Highway Traffic Safety Administration, recently appointed Adele Derby and Michael Brownlee to associate administrator positions. The two veterans of vehicle and driver-safety activities assumed their new responsibilities on July 15.

Derby filled the newly created post of associate administrator for Regional Affairs. She moved from her previous position as associate administrator for traffic-safety programs. Brownlee took the traffic-safety position vacated by Derby. He was previously director of the Office of Defects Investigation.

Derby joined the safety agency in 1980 and has administered traffic-safety programs since 1989. She previously served as associate administrator for Plans and Policy.

Brownlee has directed the investigation of vehicle defects since 1987. Before that he headed the Offices of Vehicle Ratings and Occupant Protection. Brownlee joined NHTSA in 1982. The traffic-safety programs function includes development of program ideas and materials. Programs include safety-belt use and reduction of impaired driving.

According to Curry, the regional administrator's post was created to provide a closer liaison with NHTSA's 10 regions and emphasize implementation of programs.

Derby says, "This change will lend added emphasis to implementing effective highway-safety programs in the future. I'm pleased to be working with the regions to make this happen."

Car-Phone Callers Help Others

Thirty-eight percent of the cellular-phone users polled recently say that they have called for help for someone else's disabled vehicle. Twenty-four percent have called police to warn of hazardous road conditions.

The Gallup Poll taken for the *Motorola Cellular Impact Survey* finds that the nation's 5.3 million cellular phone users are good samaritans. Seven percent have used their phones for their own medical or health emergencies. And 23 percent have used it to assist someone else in a similar situation.

Cellular-phone users also feel safer. Seventy-four percent of men feel safer compared to 89 percent of women. Twenty-five percent of all respondents say they have used their phones for their own disabled vehicles.

He's Drunk, and He's in Jail!

According to the *Journal of American Insurance,* MADD says that many other countries are tougher on drunk drivers than the United States. In Russia, they revoke the drunk's license for life.

In Turkey, police take drunk drivers 20 miles from town and force them to walk back under escort. In France, the fine is a three-year loss of license, one year in jail and a $1,000 fine.

Malaysia jails the drunk, and if he's married, they jail the wife too. In Australia, the names of drivers go to the local newspaper. The paper prints them under the heading, "He's drunk and in jail." In Bulgaria, a second conviction ends in execution.

Roof-Crush Rule Affects Light Trucks

Beginning September 1993, The National Highway Traffic Safety Administration will require new light trucks and vans to meet a roof-crush standard similar to that for passenger cars. NHTSA Administrator Jerry Ralph Curry says that the Federal Motor Vehicle Safety Standard No. 216, Roof Crush Resistance, is being extended to light trucks. This is to reduce death and injury in rollover crashes. More than 3,150 light-truck occupants died in these crashes last year.

Increased sales and use of light trucks as passenger-car substitutes have led to more people being exposed to crashes in these vehicles. Curry says that they should have the same protection as people riding in passenger cars.

The new rule applies to utility vehicles, trucks, vans and buses with a gross vehicle-weight rating of 6,000 lbs. or less. (A separate standard covers school buses.) Under the regulation, they will subject the roof of a vehicle being tested to a force one and a half times the unloaded vehicle weight. A light truck passes the test if its roof dents less than five inches.

NHTSA notes that many automakers already provide roof-crush protection in their light trucks and vans. Therefore, the new rule will not drive up consumer costs or require extensive vehicle redesign. NHTSA also urges light-truck motorists to use their safety belts regularly.

In recent years, NHTSA also has added requirements for light trucks to meet standards for head restraints, rear-seat lap/shoulder belts, and steering wheel displacement. They have also required dynamic crash testing of front-seat safety-belt systems. This is in addition to the many other passenger-car standards that have long applied to light trucks.

Safety-Belt Wearers Get Discount

Arkansas became the 38th state to enact a safety-belt use law last March. The law requires the driver and front-seat passengers to wear their belts or face a $25 fine. The bill provides for secondary enforcement.

It also contains a unique credit provision: It reduces the fine by $5 for a ticketed traffic offense if all front-seat occupants are wearing their safety belts.

Teenagers Buckle Up

Safety belts are more popular among teenagers than baseball, shopping malls and MTV, says a recent public-opinion poll. Conducted by Traffic Safety Now Inc., the poll finds that 93 percent of teens have positive attitudes about safety belts. Only 89 percent have positive attitudes about shopping malls, 82 percent for the music-video cable network MTV and 69 percent for baseball.

The survey shows that safety-belt-use laws are also popular among teens. Nearly nine out of 10 teens (87 percent) favor belt-use laws and 87 percent support strict enforcement of those laws. State belt-use laws also have a significant bearing on belt-use habits. Teen drivers who live in areas with safety-belt-use laws buckle up nearly twice as often as those in states without laws.

Other significant findings include:

- Seven out of 10 teenagers claim they wear their safety belts when riding in the front seat. Only 43 percent say they buckle up "all the time."
- Among all teens, parents rank as the No. 1 influence on teen belt-use habits.
- Forty-four percent of teenagers say their parents require them to wear safety belts.
- Ninety-two percent of teens living in states with safety-belt-use laws are aware of the laws.
- Forty percent of teens claim to "always" tell their friends to use front-seat safety belts.
- Nearly 80 percent of teens would buckle up if it would lower their insurance rates.
- More than three-fourths (78 percent) of those surveyed feel that belt-use laws are responsible for saving a significant number of lives in America.

Traffic Safety Now Inc. is a national non-profit organization dedicated to reducing traffic injuries and fatalities. The poll interviewed a randomly drawn sample of more than 1,000 teenagers from age 13 to 18.

SHORTCUTS

Loss of Records Threatens Safety

Poor driving records of millions of U.S. motorists have disappeared from public view. A study by the Insurance Research Council shows that 16 states no longer make available the accident records of individual drivers. And the situation isn't a lot better in many other states, says Donald W. Segraves, executive director, Insurance Research Council.

The council ordered state reports on a sample of 27,627 reportable crashes in 1990. Only 40 percent of the accidents showed up in states where they thought some accident information was publicly available. "That's down from 48 percent in a similar study in 1983," says Segraves.

Only 19 percent of the drivers had accident-related convictions on public record. However, more than 60 percent of them were considered at fault. In nearly all instances, traffic courts, motor-vehicle departments and state legislative restrictions caused the information to disappear from state records.

Ironically, states such as California are now demanding that insurance rates be based mainly on the individual driver's past record of accidents and violations. California requires auto insurers to put driver records first and to eliminate or de-emphasize the traditional rating factors. These are the driver's age, sex and where the car is kept. Other states are considering similar proposals.

Such proposals assume that a reliable record exists on each driver's accidents and traffic violations. They also assume that auto insurers have access to that record. "Our studies show that both of those assumptions are incorrect," says Segraves.

Lack of reliable state driver records can be especially critical. For example, high-risk drivers do switch auto insurers. Also, their involvements in serious traffic violations often don't result in an auto-insurance claim.

"This loss of information affects millions of drivers every year and is a serious threat to public safety. It is also a financial burden to drivers," says Segraves. When states withhold information, companies may inappropriately hire drivers with poor driving records as school bus and taxicab drivers, truck operators, delivery workers or others entrusted with company vehicles.

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Take It Out of the Ball Game

Major-league employees go to bat to prevent alcohol abuse at games.

By Thomas Frisbie

Until the 1989 baseball season, alcohol abuse was causing trouble at San Francisco's Candlestick Park. Fights between intoxicated fans were all too common. And disturbances in the park made officials worry about the safety of the streets nearby when those fans got in their cars to drive home.

The reputation of the fans at Candlestick Park sank to such a point that when the San Francisco Giants tried to sign Jorge Costa for a front-office job, Costa was reluctant.

"I knew the problems," says Costa, who is now vice president of stadium operations and security for the franchise. At the time, Costa was working for the baseball commissioner's office. Before that, he managed the stadium in Oakland, which has a very good reputation.

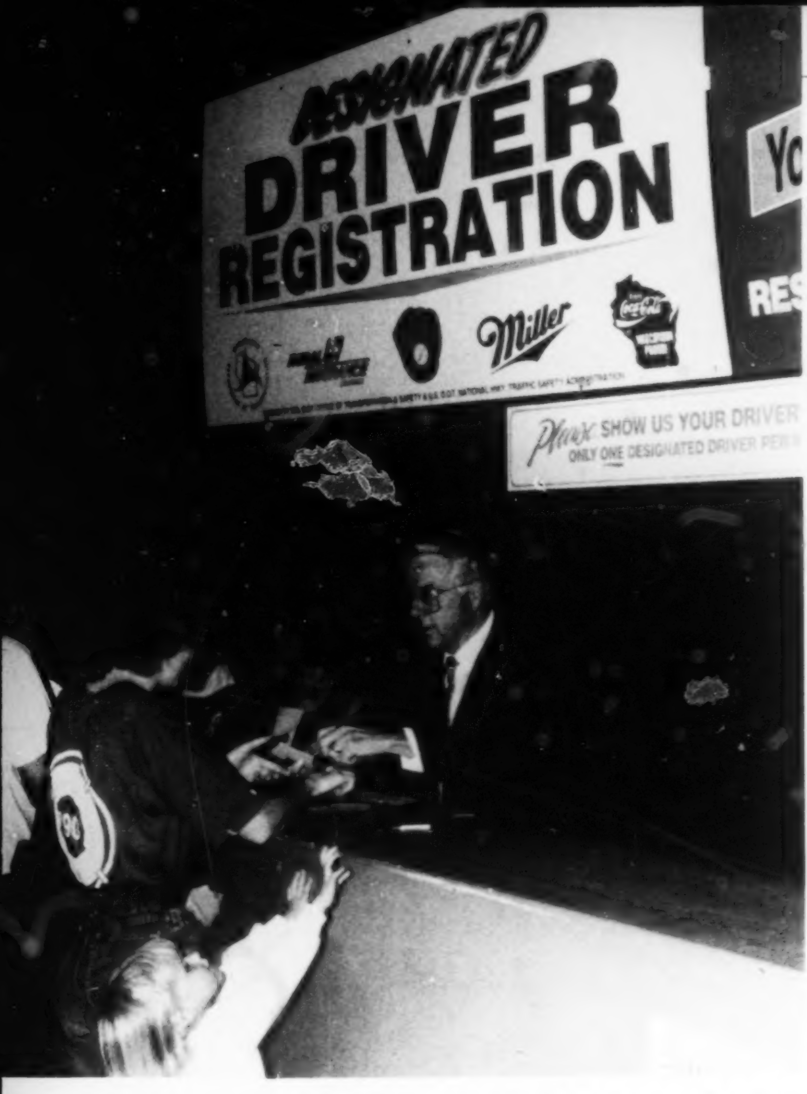
Costa says he told the Giants that unless he would have latitude to correct some problems, he wouldn't take the job. "I knew the monumental effort that it was going to take to undo a lot of the [fans'] bad habits and the perceptions [the public had of the park]," says Costa.

As it turned out, Costa needn't have hesitated. The franchise's management had the same goals in mind. And to implement their game plan, Costa and the Giants launched a TEAM effort.

TEAM Goes to Bat

TEAM — Techniques for Effective Alcohol Management — is a 6-year-old national program with a twofold purpose. One is to promote national awareness of the hazards of drunken driving. The other is to reduce excess drinking by fans attending sports events or traveling to or from them.

TEAM calls for all sports-facility employees who come into contact with the public to take alcohol-management training. This includes


DESIGNATED
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A baseball fan signs up as a designated driver at the Milwaukee Brewers County Stadium.

parking-lot attendants, ticket sellers, ticket takers, ushers and vendors. Employees—many of them part-time workers with little experience—learn how to recognize fans who have had too much to drink. They also learn what their facility's policy calls for them to do about it. Training teaches the staff to be alert, know the policy and to act promptly.

All the employees learn to watch for the following signs of alcohol impairment: inattention, impaired reflexes, reduced judgment, impaired vision and impaired coordination. The impaired, the program explains, can endanger themselves, as well as others. Employees learn that in dealing with the alcohol impaired, they must be firm and consistent, polite and diplomatic.

For many facilities, the city, county and state laws do not allow fans to bring alcohol to games. Also, a facility's alcohol sales permit may not allow fans to "bring their own."

TEAM also coordinates public-service announcements in stadiums and on sports broadcasts. The announcements increase public awareness of drunk driving hazards.

TEAM's Starters

TEAM's founding members include the National Highway Traffic Safety Administration, the International Association of Auditorium Managers and the National Basketball Association.

Officials of those organizations and of TEAM's other members say TEAM has performed spectacularly for crowds in stadiums and arenas around the country. In short, TEAM is a "singular success story," Costa says.

In San Francisco, TEAM, along with other efforts by Giant management, has put the Giants "at the head of the class," Costa says. The number of fans ejected from the park has declined even as crowds have increased. Last year, 1,050 fans were ejected, compared with some 1,250 the year before. This figure shows a decline from 8.32 per 10,000 guests in 1989 to 6.74 in 1990. In the first part of the 1991 season, that number dropped again—to 4.53 ejections per 10,000 guests.

The Giants' ejections for drunkenness dropped from 53 percent in 1988 to 1.5 percent last year. This year the Giants began achieving a crowd-control counterpart of baseball's old-fashioned "shutout": games with no fan ejections at all.

The Giants also have instituted a designated-driver program. Under the auspices of a TEAM offshoot called California Teamwork, they help sponsor a "traffic-safety day" at Candlestick Park. Anti-drunk driving signs are posted throughout the park. Also employees wear buttons that caution fans to buckle up and to avoid drinking and driving. "We think we are doing our part to reduce alcohol-related fatalities around our ballpark," Costa says.

The Giants are not the only franchise doing their part. Now Major League Baseball is a member of TEAM. TEAM officials approached the baseball organization to pitch the program's benefits in 1987.

"All 26 teams are now participating," says Linda Pantell, Major League Baseball's manager for West Coast facility operations.

TEAM doesn't dictate what officials at a sports facility must do or what policies they must implement. Rather, it provides a program that

(Top photo) A designated driver drinks free soft drinks at the Detroit Tigers Stadium. (Bottom photo) Baseball-stadium employees are on hand to handle drunk fans.

sports teams can adopt voluntarily to reduce irresponsible alcohol use.

Ballparks Are Not Bars

Jim Small, of Major League Baseball, says that they are ecstatic about TEAM's success. "We were tired of people using our ballparks as bars and as an excuse to come and drink."

Small says that they were concerned about how to come to grips with the alcohol abuse. When they became aware of what TEAM was, Small says, "We couldn't join fast enough."

The focus on responsible alcohol use has discouraged the type of rowdy activity that kept some families from attending the games. The TEAM effort has helped lower the premiums for liability insurance as well.

"If people want to enjoy beer, that's great," says Small. It is the abuse of alcohol and the driving after drinking any alcohol that TEAM is trying to discourage. A lot of problems occur when people are leaving the ballpark. Now, Small says, "We are doing a better job of keeping them sober while they are at the park."

Not everyone is cheering for TEAM. For example, Cleveland Indians fan Dan Ruth objects to policies that cut off beer sales at a certain point in the game.

"What if it turns out to be an extra-inning game and you want to buy a beer?" says Ruth. "Beer is as much a part of baseball as hot dogs and booing the umpire. If they [sports facilities] are going to keep this up, they might as well do away with baseball."

However, John Cordova, director of corporate marketing for the Milwaukee Brewers, says, "The reaction has been pretty positive." Baseball executives report that fans in general have voiced few complaints about TEAM. "We've given the ballpark back to the fans," says Costa.

Designated Drivers Sip Free

To further promote responsible alcohol use, Major League Baseball is planning to go to bat for a designated-driver program. The model is a promotion designed by the Milwaukee Brewers. That team offers free soft drinks to fans who sign up as designated drivers. The Brewers also enter drivers' names in a contest that awards various prizes.

Last year, 28,000 Brewers fans signed up for the program. And about 2,000 more took part during four Green Bay Packers football games last season at the Brewers' County Stadium.

"We are thinking about taking Milwaukee's program and giving it to other clubs," Small says. About 10 teams decided to implement a designated-driver program this year.

TEAM Touches Football

Baseball is just one sport in which TEAM can help chalk up victories over irresponsible alcohol use. This fall, for example, the National Football League plans to make its franchises part of TEAM as well.

"We plan to assess all the stadiums and have TEAM help us develop a sufficient alcohol-management policy," says Joe Ellis, of the NFL. "Getting involved with TEAM shows we are seriously addressing the issue of responsible drinking."

Some football teams, such as the Green Bay Packers, that share stadiums with baseball clubs are already involved in TEAM because of the baseball franchise's participation. Some other football teams had launched their own alcohol-management policies before the NFL joined TEAM, Ellis says.

Currently, seven teams have instituted no-alcohol family sections. Out of our 27 stadiums, about 20 cut off sales of alcohol at the start of fourth quarter or sooner, Ellis says. Almost all the clubs are using a scoreboard in some fashion to promote responsible alcohol use. Everybody uses public-address announcements.

Everyone TEAMs Together

By joining TEAM, the NFL is following the steps of such other members as Allstate Insurance, CBS, Mothers Against Drunk Driving, and the National Association of Broadcasters.

Members also include the National Automobile Manufacturers Association, the National Collegiate Athletic Association, the National Hockey League (which will implement TEAM in the coming season), the National Safety Council, the Governors Highway Safety Program and sports-facility concessionaires.

It is a real, public-private coalition, says James Hedlund, of NHTSA's office of alcohol and state programs. It is not a turnkey, fixed set of policies that everyone has to adopt. "First, you bring together everyone in the stadium — managers, people in charge of admissions, ticket sellers, security and ushers, as well as vendors. Together these folks work out what their stadium's policy on alcohol will be."

Some stadiums cut off alcohol sales after the fifth inning. Some have alcohol-free sections; some don't. TEAM shows stadium management how to train the employees to implement its policy.

The National Highway Traffic Safety Administration originally handled TEAM training of sports-facility employees. Now the National Safety Council coordinates the training. The Council has a nationwide network of agencies for different safety programs.

The Council acts as the TEAM training instructor for the sports organizations. It provides TEAM instructors who directly train employees, says Al Lauersdorf, alcohol-programs manager for the Council. The Council also trains instructors for sports facilities so they can train their own employees. The Council also will assess current programs at sports facilities. Lauersdorf says that TEAM can be made available to any major event facility, that serves alcohol, such as concert halls.

Results Score High

A NHTSA survey of seven baseball franchises was released this year. The results show that management believes TEAM has helped reduce alcohol problems. Employees are able to deal effectively with intoxicated patrons, Hedlund says.

The survey also indicates that beer sales may decline but that other food and beverage sales may increase. "We have noticed a dramatic change in the mind-set of people," says TEAM Chairman Jerry Sachs. Less beer is selling now. And the size of beer containers has been cut down. Sachs is also president of the partnership that runs the Capital Centre arena in Landover, Md., near Washington, D.C. Capital Centre is home to the Washington Bullets basketball team and the Washington Capitals hockey team.

Up until the mid 80's, most facility managers had really never looked at the alcohol problem and taken any decisive action to deal with it, Sachs says. "We were pouring beer down people's throats as often and in as large quantities as we possibly could. It's a revenue producer. We kind of looked away when it came to the impact and what the potential negative results could be."

> *We've given the ballpark back to the fans.*
> *— Jorge Costa*

TEAM Goes on the Road

TEAM'S public-education campaign also plays an important part, Sachs says. One program piloted this year, for example, featured a no-alcohol, pre-graduation party on June 1 at the Capital Centre. A Washington Bullets player co-chaired the event. And a popular, local disc jockey hosted the party.

"We are offering them a free party as long as they agree to keep their prom and graduation parties alcohol free," Sachs says. "We hope to take this to several more cities next year and, ultimately, throughout the league." The pre-graduation party was just one of the new efforts to use sports teams to discourage alcohol abuse.

Each league has personalities, players or coaches make public-service announcements on anti-drinking and driving, Sachs says. These run on the networks that carry sports. And they are sent to teams for broadcast on their local stations.

Each facility uses signage to make people aware of the issues of driving and drinking. The messages are crucial to keep the roads in the area of sports facilities safe.

"Any of our facilities can become the biggest bar in town on a given night. We can pour more drunks out on the highway than the whole of Georgetown," says Sachs. For years and years, the sports industry had never looked at this. Now, Sach says, there can't be too many facilities left that aren't sensitive to the issue. "Being able to protect lives is the most important issue we can deal with," Sachs says.

Data isn't available to analyze TEAM's overall impact on highway safety. However, sports officials at San Diego's Jack Murphy Stadium believe the program has significantly reduced drunkenness.

"We see less of it in the park itself," says Doug Duennes, director of stadium operations for the San Diego Padres. "So we feel pretty strongly that there is less of it on the roadways."

Maury Hannigan, fourth from left, commissioner of the California Highway Patrol, gets ready to throw the first ball on Traffic Safety Day at the Giants' Candlestick Park in San Francisco. Hannigan is joined by (left to right) El Protector, Vince, Tanya Chalupa, project director of the Association of Highway Traffic Safety Leaders, Larry, Woody Woodpecker and Captain Cycle.

WASHINGTON WORLD

Transport of Children Is Serious Bus-ness

By Jim Castelli

The National Highway Traffic Safety Administration has taken several steps to make school buses safer. The agency has issued a new regulation, two proposed regulations and — with the Federal Highway Administration — a set of non-binding guidelines for states to follow. The actions include:

- A regulation requiring new safety devices on buses.
- A proposed regulation on bus exits and emergency doors.
- A proposed regulation to clarify and expand procedures for testing school-bus body joints.

School buses safely transport millions of youngsters each day, and deaths or serious injuries to riders are rare. NHTSA Administrator Jerry Ralph Curry says that they are the safest form of transportation, but "no cargo is more precious." These regulations are part of a continuing process to ensure the highest degree of protection for school children, says Curry.

He says the new exit rule is based on studies by NHTSA and the National Academy of Sciences and on broad public comment.

In the new regulation, NHTSA requires that buses sold after Aug. 31, 1992, have stop signs that swing out from the left side of the vehicle. Curry says that the safety feature is an extra reminder to motorists approaching from either direction that they must stop because children will be leaving or boarding a bus. Current rules require flashing red lights in the front and rear of buses when picking up or dropping off children.

"An average of 12 children per year are struck and killed by cars while getting on or off school buses," says Curry. Nationally, drivers illegally pass about three school buses each day. Curry says a study found that swing-out stop signs cut passing violations by about 40 percent. Thirty-six states now require swing-out stop signs. And 71 percent of new school buses come equipped with the device.

Each year school buses strike and kill about 26 students.

NHTSA also says it wants school buses to have additional mirrors to help drivers spot children near their buses. About 26 students are struck and killed by school buses each year.

NHTSA proposes rules requiring drivers to have a clear, ground-level view of the front of the bus. The regulations says drivers must have a clear view of the tires. In effect, they would require buses to have two mirrors — a standard flat one and a curved, wide-angle one — on both sides of the driver. Outfitting buses with the additional mirrors would cost about $63 per bus, says Curry.

In another proposal, NHTSA says the number of exits required should be based on the number of seats on the bus. That way, larger school buses would have more exits than are now required by federal standards. The proposal would also improve access to side emergency doors and increase the visibility of emergency exits.

The NHTSA-FHWA guidelines are not legally binding. They recommend minimum models for the states to follow in running a pupil transportation program. Curry calls the new guidelines the first substantial revision since 1973.

He says the guidelines update the definition of school buses to include large vans which can carry more than 10 people. It urges that these vans meet the same color, marking and other requirements as large school buses.

Another key part of the guidelines urges states to replace school buses that do not meet a series of safety standards that became effective on April 1, 1977.

The revision includes these other recommendations:

- States should require drivers of large school buses to have a commercial drivers license. FHWA will require all drivers of buses carrying 16 or more people to have such licenses by April 1, 1992.
- State plans for selecting, training and supervising school-bus drivers should deal with preventing alcohol and drug impairment.
- All school-bus passengers should have easy access to emergency exits. Baggage should be stored and secured so that aisles are clear and interior luggage racks should be able to withstand a crash.
- School buses should be inspected twice a year and maintained to FHWA Federal Motor Carrier Safety regulations.
- School-bus drivers should be required to wear safety belts.
- Pupils using school buses should receive safety training at

least once a semester. Those who use buses only for special occasions should receive training each time.

Risks for Trucks

A General Accounting Office study says that trucking companies with serious financial problems tend to develop high accident rates. "Firms in the weakest financial position had the highest subsequent accident rates," the report says.

The trucking study of 537 companies notes that poor finances led to poor safety for the following reasons:

- Lowering the average quality of driver performance.
- Encouraging driver non-compliance with safety regulations.
- Decreasing management emphasis on safety practices.
- Deferring truck maintenance and replacement.
- Introducing larger, heavier, multi-trailer trucks.

The study also reports the following:

- The smallest highway freight carriers, as a group, had an accident rate that exceeded the total group by 20 percent.
- Trucking firms operating with leased equipment or drivers or both had a group accident rate of 15 percent to 21 percent more than the rate for the overall group.
- Younger, less-experienced drivers and lower-paid company drivers "posed greater-than-average accident risks."

The General Accounting Office commissioned a survey of 1,300 interstate drivers serving the state of Florida in 1989. "As was predicted. . .GAO found that younger and less-experienced truck drivers were more likely to be in accidents," the report says. It notes a private survey found lower-paid drivers were more likely than higher-paid drivers to violate safety regulations.

"Among company drivers, those earning less than 18.5 cents a mile had about twice the odds of having received either speeding citations or warnings in the past 90 days," the GAO says.

The agency says its findings are important because during the period from 1985 through 1989, about 4,900 people a year died in crashes involving heavy trucks. It also says statistics indicate that deaths are about twice as likely to occur in crashes that involve tractor-trailer combinations as in those involving automobiles only.

The GAO recommends that the Department of Transportation collect mileage data from truck companies in order to calculate accident rates. It also recommends that the department consider developing a set of predictors of safety problems. These include financial health, market share and driver information.

The Department of Transportation disagrees with many of the GAO's findings. It says economic indicators are unsatisfactory as predictors of safety performance "because they are ambiguous." DOT says the report might mislead people into believing poor economic conditions are definitely "linked with poor safety performance and that DOT can use [them] to identify high-risk carriers for safety enforcement purposes."

But the GAO rejects the criticism. It says its study found strong evidence of the relationship between poor safety records and poor economic conditions.

Hard-Hit Minorities

The U.S. Centers for Disease Control has called for better traffic-safety education and public-health programs for minorities. The CDC also calls for more reliable data on the race and ethnicity of those involved in traffic accidents.

The CDC analyzed a study of pedestrian fatalities conducted by the New Mexico School of Medicine. The study finds that Hispanic and Native American pedestrians in the state were disproportionately likely to die in traffic accidents. The same pattern exists nationally, the CDC says.

The CDC cites several reasons for this:

- In New Mexico, minorities are more likely to live in rural areas. Those hit in rural areas are often hit at a higher speed, making death more likely.
- Minorities have limited access to emergency transportation.
- Rural areas have fewer places with designated pedestrian areas.

Deaths are about twice as likely to occur in crashes that involve tractor-trailer combinations than in those involving automobiles only.

Motorcyclists Rev Up for Safe Driving

State programs train drivers to veer clear of crashes.

By J.D. Shults

The instructor, donned in leather pants, leather jacket and boots, approaches his students. "Last night in the classroom, when I covered the benefits of wearing full protective clothing, some of you said that it can get pretty hot in leather. I agree.

"But watch this," the instructor says. He slips his helmet and gloves on, turns and walks about 20 feet across the asphalt parking lot that serves as the training grounds. He turns and starts running toward the students. When he is about 10 feet away, he hurls himself on to the asphalt, doing a big belly flop. He skids to a quick stop, bounces right up and pulls his helmet off.

He then turns to the students, mostly clad in jeans and light jackets and notes, "I don't have a scratch on me. Would any of you care to try that?" There are no takers.

"I was going less than five miles an hour. Can you imagine what would happen without leathers, boots and helmets at just 25 miles an hour?" he asks. The point has been made and indelibly etched into the minds of the students.

And perhaps a life has been saved. The above was a dramatic improvisation by an instructor of a motorcycle-rider-education course.

Classes Rev Up

Motorcycle-rider-education programs began in the mid '70s in the United States. With the recent passage of legislation in Nevada, 40 states now have legislated rider-training programs.

The Motorcycle Safety Foundation, a non-profit organization, launched its Beginning Rider Course in 1973. By 1990, more than 87,000 people had completed MSF training courses. "We'll have our first million trained within the next few years," says Bob Reichenberg, manager of education for the foundation.

MSF has helped establish and support rider training nationwide. It developed the course curriculum and provides training curriculum materials. The foundation also gives technical assistance.

"The task of establishing functional rider education was left to the individual states," says Bruce Biondo. A state motor-vehicle agency or department of transportation usually administers the program. Biondo is motorcycle program manager for the Virginia De-

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partment of Motor Vehicles. "We train the instructors, set up and run the classes and handle all of the administrative details."

Typically, a surcharge added to motorcycle-registration fees and/or motorcycle-license endorsements fund state rider-education programs. The programs, in turn, subsidize the tuition costs to the riders. This allows more people to take the courses.

Staying Alive

To have riders stay alive on the streets is the ultimate objective of MSF's Motorcycle Rider Course. Beginning students take nine hours of classroom instruction and 11 hours of range instruction. The Experienced Rider Course offers seven and one-half hours of range instruction. This includes one-half classroom training and one-half hands-on.

In the classroom, students learn riding skills and the fundamental principles of operating a motorcycle. For example, many motorcyclists do not use the front brake effectively. An old wives' tale says using the front brake can cause a rider to fly out over the handlebars.

Students learn that mastery of the front brake is critical to safe operation of the motorcycle. Approximately 75 percent of a cycle's braking power is in the front brake. Students practice under the watchful eyes of trained instructors.

The course addresses road situations that pose particular problems to cyclists. Possible hazards include rain, roadway debris, animals, night vision, surrounding traffic, wind, and other conditions that may have less affect on automobile drivers. Range instruction takes place in an empty parking lot — never on public streets.

Motorcycle riding demands higher level skills than does automobile driving. One course goal is to warn riders of the impact of alcohol and drugs on riding skills.

Instructors are experienced motorcyclists. Many of them, men and women, work in professional or technical areas. Those who enter the 53-hour certification program must display both teaching and riding skills. They must renew their certificates every three years.

For women, having female teachers can take away the intimidation of the stereotype thinking that women can't ride motorcycles well. "While motorcycling has had the hairy male image, that's far from true," says Reichenberg. He says that more and more women are taking the courses.

Motorcycle riding demands higher-level skills than does automobile driving.

Spike and the Executive

Spike and Big Mamma sometimes show up at a rider-education class. But a first-grade teacher, a

MOTORCYCLE SAFETY CLASS
MOM

(Left) Studies show that many riders lack the ability to swerve quickly to avoid an obstacle (such as an automobile). Here students refine this skill. (Below) An instructor gives specific feedback and coaching, an important aspect of on-range training.

police officer and a company manager may be in the same class. A typical class also might include high-school students, truck drivers, executives, computer technicians and a doctor or lawyer.

The average student is about 30 years old. Individual students range from 16 to well into the 60s and 70s. Females often make up a third or more of the class.

Families often take the class together. Husband and wife duos are most common. Sometimes a parent will consent to buy a motorcycle only if the son or daughter takes training. Offspring sometimes turn the tables. "If I have to take the course, you should take it, too." This is a common sentiment that results in a parent also enrolling in the course.

Many students have had previous motorcycling experience. But about half the class is likely to have never ridden a motorcycle before. Within two weeks, they will know the basics of riding a motorcycle. They will also know how to deal with traffic and roadway hazards.

Dealers Steer Buyers

Local motorcycle dealers tend to be enthusiastic supporters of local Motorcycle Rider Courses. They do not want the responsibility (or liability) of teaching novice riders. The course gives them a place to refer fledgling riders. Many local motorcycle dealers provide some financial or product support for the courses.

Martin Horn, owner of an Illinois Suzuki dealership, refers customers to a rider-education program at Northern Illinois University in DeKalb.

"Remember how you crashed when you learned to walk?" Horn asks a customer. "The motorcycle-safety course can help you keep from crashing when you learn to ride."

Horn says that people often buy motorcycles for fashion. "I try to match customers with motorcycles that are appropriate to their level of experience." Buying a motorcycle is like buying a car, he says. Emotion often governs the purchase more than practical considerations.

Do Courses Save Lives?

The past 10 years have seen a decline in motorcycle fatalities. Fatal motorcycle accidents with alcohol involvement have also declined over the past decade. Rider education alone is not necessarily responsible for the decrease in fatalities. However, some correlation between decreased accidents and increased rider-training appears certain.

Approximately two-thirds of the multiple-vehicle accidents that involve motorcycles and cars are directly caused by right-of-way violations by an automobile driver. This data, says Reichenberg, points to a definite need for all automobile-driver-education courses to include motorcycle awareness.

Since the first rider course began, constant research, development and revision have kept MSF's programs up-to-date. They also provide model legislation and help with government relations.

State licensing agencies often recognize the Motorcycle Rider Course. In fact, 18 states waive all or portions of the licensing tests if an applicant has successfully completed training. Illinois requires riders under 18 to take the course. Illinois riders over 18 can pass the Motorcycle Rider Course in lieu of taking the riding portion of the state licensing exam. The requirements for each state vary as do their laws.

The problems of motorcycle-rider programs vary from state to state, too. But there are several common threads. Funding, as with many other safety-related programs, is always difficult at best. Classes often fill through word of mouth and dealer recommendation. More publicity would probably spur more motorcycle riders to seek the training that is likely to save their lives.

J.D. Shults has been a Motorcycle Safety Foundation-certified instructor for six years. A motorcycle rider for 30 years, Shults always wears a helmet.

Hurt Study Sheds Light

Hugh H. Hurt Jr., professor of safety science at the University of Southern California, in 1981, published a comprehensive study of motorcycle accidents. The report, "Motorcycle Accident Cause Factors and Identification of Countermeasures," documents research funded by the U.S. Department of Transportation. This study shed a great deal of light on a subject filled with myth and misconception.

The 10-year-old report is the most authoritative and widely quoted safety document on motorcycling. The motorcycling community considers Hurt the guru of motorcycle-safety information and data.

One glaring statistic is that 92 percent of accident-involved motorcyclists are essentially without training. The accident-involved motorcycle rider, the report concludes, is a young male riding a middleweight machine. He has been riding motorcycles for less than three years. He has no license. And he is self-taught, or he learned from family or friends.

Experience is a critical factor. Riders with less than three years experience have more than 50 percent of all motorcycle accidents.

At the International Motorcycle Safety Conference in Orlando, Fla., in 1990, Hurt told motorcycle-safety experts that more data is needed. He questions, though, whether new technologies in motorcycling will affect the validity of his previous findings. The tab for the original study was $500,000. Hurt estimates that it would take two to three times that figure to replicate the study today.

Helmet Controversy Continues

Some riders think that "helmet" is a German soldier in a World War II movie. And state laws on helmet use vary considerably. "Efforts to mandate use of safety helmets are always challenged in the arena of politics, but never in the arena of science," says Professor Hugh H. Hurt Jr.

The Motorcycle Safety Foundation Rider Education Program strongly encourages helmet use. In fact, participation in the program requires helmets. Most course sponsors furnish helmets along with motorcycles.

The American Motorcyclist Association strongly endorses rider education to reduce fatalities. But they do not endorse mandatory helmet laws.

Mandatory helmet-law advocates point out that head injuries also increase medical costs and insurance. Ed Youngblood, president of the association, maintains that helmets are a matter of personal choice. "If the advocates of mandatory helmet laws believed their own arguments, they would quickly conclude that mandatory helmet laws must be applied to all automobile drivers as well. If you doubt that, just check the head-injury statistics in all motor-vehicle accidents, rather than those involving only motorcycles," he says.

"It makes more sense to prevent an accident from happening in the first place. That's why the association strongly endorses rider education," says Youngblood.

Irvin B. Etter, senior vice president, National Safety Council, testified this year on OSHA's proposed rule on occupant protection in motor vehicles. Etter says that, according to the National Highway Traffic Safety Administration, the use of helmets by motorcyclists decreases the risk of fatality by 29 percent.

"Motorcycle-helmet use has been shown to save lives," says Etter. "A University of California study found that wearing a helmet was the single greatest factor in preventing deaths and reducing head injuries from motorcycle crashes." In states with all-rider helmet-use laws, Etter says, rates of compliance are estimated at between 95 and 100 percent.

Are Motorcycle-Safety Programs in Jeopardy?

Without program evaluation, pooled state funds risk a washout.

By Gary Winn

A very real threat exists for some of the 39 state-level motorcycle-safety programs established since 1979. More than $12 million may disappear if state motorcycle-program administrators cannot clearly show their programs' benefits.

State legislators often raid the funds earmarked for motorcycle-rider education when their budgets feel the pinch of a soft economy. State lawmakers may abolish the programs as they attempt to balance state budgets. For example, Florida and Indiana are attempting to drastically modify their programs right now.

Funding Changes Hands

At one time Congress funded motorcycle-safety programs. But it eliminated federal funds for motorcycle safety in 1982. Slowly, states began passing legislative reforms. In 39 successful initiatives, state activists and private industry organized and led programs. These new state laws vary. However, comprehensive programs include rider/driver training; improved licensing, such as making stricter rules; and motorists' awareness of motorcyclists' problems.

Typically, a system of user fees and dedicated funds support the programs. Funding, however, varies from state to state. Sometimes a program does not completely spend its pool of funds by the end of the fiscal year. The remaining funds or the whole fund then often becomes attractive to other state agencies. This is true of agencies without enough appropriation or budgets of their own.

Budgets Risk Loss

In 1988 the Louisiana legislature attempted to balance its budget by shifting funds for motorcycle-safety training to other programs. This put $100,000 in pooled motorcycle-safety funds directly at risk. Legislators derailed this effort in chambers. But, the same threat remains in other states.

For example, Massachusetts had a serious budget deficit in 1989. Its governor advised lawmakers to solve part of the problem. He asked that they appropriate two years of accumulated user fees from the motorcycle-safety project. Legislative committees delayed these funds (nearly $200,000) for months while deciding their fate. Ultimately, the special action of user groups helped restore the program.

California's rider-education program has an annual budget of more than $1.4 million—a tempting amount for any cash-starved legislative committee.

And in states such as Missouri, where the state constitution prohibits dedicating transportation funds, user-fee funds are always at risk. They need defense through consistent program evaluation.

Defend the Programs

At the heart of this issue is the need for program administrators to develop objective criteria and data-based evaluations to protect the integrity of motorcycle-safety programs.

Administrative evaluations include measuring how closely training and licensing conform to specified guidelines. A common administrative evaluation is monitoring field-training programs and comparing them with program standards.

Impact evaluations determine what effect the program has had on motorcycle-accident or fatality rates. Impact evaluations usually involve a statistical comparison of trained riders with a population of untrained and/or unlicensed riders. They give the most effective assessment of the overall objective of rider-education programs. This is because they relate rider education directly to decreased fatalities and lower medical or insurance costs.

Who's Evaluating?

Research was done to determine the "state of the art" in motorcycle-program evaluation. The study also shows how programs may be jeopardized because they lack empirical evaluation for support.

The research is based on survey results collected by sampling 31 states that have an established program based upon dedicated-fund legislation. The survey asked each state motorcycle-program administrator 11 questions. Questions asked about each program include whether the enabling legislation required evaluation; whether the state engaged in evaluations anyway; and if so, what types of evaluations did they perform or plan?

Intense follow-up procedures to this mail survey account for the 100 percent response rate. The survey identified all state administrators with mature programs in 1990 who responded.

The percentage of state administrators who do evaluations is as follows.

Administrative evaluations:

- Twenty-six percent have state laws that require program evaluations.
- Fifty percent evaluate their total program costs.
- Sixty-four percent evaluate training costs.
- Twenty-five percent perform licensing evaluations.

- Twenty-one percent evaluate their awareness projects.
- Twenty-nine percent measure rider demographics.
- Sixty-one percent perform evaluations on instructor training or retraining.

Impact evaluations:

- Fourteen percent evaluate trained riders in accidents.
- Eleven percent measure licensed riders involved in accidents.
- Four percent evaluate their awareness projects.
- Zero percent do other impact evaluations.

Survey results show that even inexpensive administrative-cost and demographic evaluations are not widely done. Moreover, very few states are doing impact evaluations.

Administrators who are unable to defend their work risk the loss of funds to other projects. Many of the program administrators say, although evaluations are not required by law in their states, that they are developing or plan to develop some form of administrative-evaluation procedure.

Be Wise, Be Prepared

Motorcycle-safety program administrators should be prepared to provide objective, data-based answers to questions about the effectiveness and cost-efficiency of their programs.

Relatively inexpensive demographic and administrative surveys are not being widely performed. But they could form the basis for such defenses, followed by more intensive and useful evaluations of riders trained and licensed.

It is clear that state motorcycle-program administrators must take a fresh look at evaluating their programs. Positive findings would support attempts to pass further funding legislation, and negative findings should save legislators the time and trouble of enacting new laws.

There are other reasons why evaluations of motorcycle-safety programs should be the rule rather than the exception. First, there is no reason to "reinvent the wheel" every time a state begins a new program. A small sample of states could establish and test a set of motorcycle-program specific evaluation criteria to assist the direction of both new and existing programs. Why not base program elements on what has proved successful in other states? Second, administrative and impact evaluations allow administrators to examine cost-effectiveness.

Finally, state and federal highway-safety planners should note other problems if lawmakers deplete these funds. They may have to provide expertise, contractors and funds for a whole new generation of state-level projects. States that consider drafting new self-funding safety bills would be wise to make evaluation an integral part of the legislation.

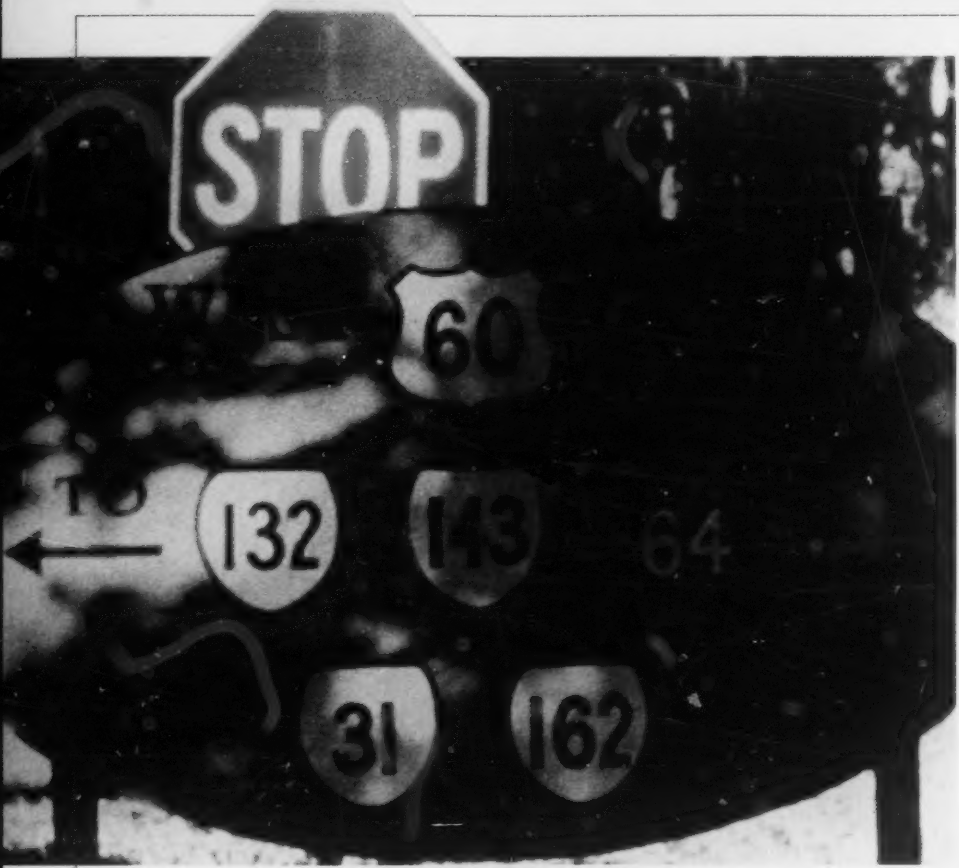
Gary Winn is assistant professor, Department of Safety Studies, West Virginia University, and associate director of the West Virginia Traffic Safety Center, Morgantown, W.Va.

State Motorcycle-Rider-Education Programs

State	Total Motorcycles In Use in 1990	MSF Recognized Rider-Education Sites In 1990	Civilian-Course Graduates in 1990	State Legislation For Rider-Education Programs	Estimated Annual State Funding
Alabama	140,700	8	297	Yes	$190,000
Alaska	36,200	5	114	No	None
Arizona	104,400	19	654	Yes	76,000
Arkansas	129,100	5	104	No	None
California	832,300	80	7,717	Yes	1.3 mil
Colorado	92,300	8	882	Yes	276,200
Connecticut	72,100	11	1,137	Yes	118,000
Delaware	13,400	4	349	Yes	82,000
District of Columbia	1,800	3	147	No	None
Florida	273,300	33	2,826	Yes	586,000
Georgia	200,700	18	896	Yes	226,000
Hawaii	not available	8	702	Yes	23,000
Idaho	53,400	2	12	No	None
Illinois	228,600	40	6,969	Yes	1.2 mil
Indiana	175,600	13	2,293	Yes	200,000
Iowa	110,700	41	1,432	Yes	250,000
Kansas	64,200	12	117	Yes	98,000
Kentucky	88,600	10	294	No	None
Louisiana	121,700	6	119	Yes	102,000
Maine	52,000	8	1,184	Yes	72,000
Maryland	83,200	14	4,115	Yes	550,000
Massachusetts	112,900	8	938	Yes	190,000
Michigan	294,700	59	2,997	Yes	650,000
Minnesota	152,500	110	1,778	Yes	500,000
Mississippi	79,200	4	20	No	None
Missouri	133,600	8	378	No	None
Montana	37,600	9	94	Yes	50,000
Nebraska	50,000	10	279	Yes	80,000
Nevada	39,900	4	319	No	None
New Hampshire	55,800	2	70	Yes	150,000
New Jersey	125,800	5	693	No	None
New Mexico	45,700	5	891	Yes	71,000
New York	299,700	16	536	No	None
North Carolina	158,800	16	387	Yes	192,000
North Dakota	25,300	8	530	Yes	120,000
Ohio	264,600	28	2,292	Yes	1.0 mil
Oklahoma	90,400	8	245	No	None
Oregon	108,700	6	1,422	Yes	300,000
Pennsylvania	268,100	28	9,302	Yes	1.0 mil
Rhode Island	21,400	3	2,530	Yes	130,000
South Carolina	66,900	9	2	Yes	None
South Dakota	26,900	22	320	Yes	47,000
Tennessee	156,900	7	359	Yes	214,000
Texas	423,000	49	3,070	Yes	1.0 mil
Utah	80,500	9	155	Yes	None
Vermont	20,300	1	90	Yes	90,000
Virginia	133,600	26	1,954	Yes	199,000
Washington	145,800	24	2,381	Yes	500,000
West Virginia	72,600	0	—	Yes	58,000
Wisconsin	167,100	20	1,452	Yes	159,500
Wyoming	22,400	3	32	No	None
TOTAL U.S.*	6,555,000	855	67,885		

Source: Motorcycle Safety Foundation, Irvine, California.

*Excludes military



This confusing and improper signage and location is a lawsuit waiting to happen. The stop sign is hidden, and the route sign is "noisy."

Repairs Curb Lawsuit Crisis

Risk management helps highway agencies reduce accident liability.

By Walter P. Kilareski

Essentially, if anyone runs off the road and has serious injuries or dies, a citizen can and may sue the government for compensation. The notion that the government has "deep pockets" and that someone must pay has become second nature in America.

In general, government agencies retain sovereign immunity (government cannot be sued) for most acts of judgment. Courts can, however, try negligence cases involving duties dictated by law. In fact, some state tort claim acts directly state that ordinary citizens can sue for highway maintenance and operations negligence. Attorneys often charge one-third of the settlement for their fee. And they are not bashful about taking on cases against the government.

Approximately 45,000 people die each year in highway accidents. And thousands of serious accidents occur as well. Therefore, it is easy to understand the statistics that predict that lawsuits will increase each year.

In many state and local highway agencies, tort litigation has reached the crisis level. Sovereign immunity protected most of them until the '70s. However, within the last 20 years, state courts across the country have modified this concept. Now, with the loss of sovereign immunity, lawsuits involving highway accidents have increased steadily.

For example, in Pennsylvania, the number of tort cases against the Pennsylvania Department of Transportation has skyrocketed over the last decade. Claims against the Commonwealth of Pennsylvania now total more than $200 million. In fact, attorneys employed by the Pennsylvania Attorney General's Office are swamped. Each lawyer handles more than 150 cases. There seems to be no end to the problem.

Risks Are Manageable

The tort-liability crisis may seem hopeless. Still, it is not wise to adopt an attitude of "us versus them." Practical risk-management programs, on the other hand, can prove very effective. This is true for both large and small highway agencies. For risk management to work, an agency must thoroughly identify its exposure to the risk of a loss. The department must develop methods to handle these exposures to minimize losses.

To be practical about risk management, a highway agency can lessen tort losses by reducing accidents. Remember, an accident must occur before someone can accuse the agency of negligence. If the agency reduces accidents, it reduces the risk—plain and simple.

Whose Fault Is It?

The motoring public can expect the government to provide "reasonably safe" highways. The government has a duty to operate and maintain the highways in a "reasonably safe" manner. This involves routine inspection of the facility. And it calls for repairs if someone gives notice about a defect in the highway system.

The most common tort case involves negligence of the highway department where it had notice but did not make repairs. For the plaintiff to win the suit, the lawyer must prove that the highway agency had a duty (this is easy to prove). Also, the lawyer must prove that the agency was negligent (this could be hard to prove). The plaintiff must also prove that the breach of duty was the proximate cause of the injury.

An actual case, for example, involved a hidden intersection of two state highways. The intersection sight distance was sufficient only for a speed limit of 35 mph. But 55 mph was the posted speed. An accident occurred; a lawsuit followed.

The plaintiff said that the intersection was dangerous. The case proved that the roadway was under state jurisdiction (duty). The state had failed to warn drivers of the intersection and/or lower the approach speed to 35 mph (negligence). After the facts were out, the state agreed to a large monetary out-of-court settlement for the plaintiff.

High-risk Areas Abound

Although accidents may always happen, some are more likely to result in lawsuits. An understanding of these types of high-risk accidents can reduce risks. The following areas should receive special attention: work-zone areas, edge drop-offs, fixed objects near the roadway, and traffic-control devices.

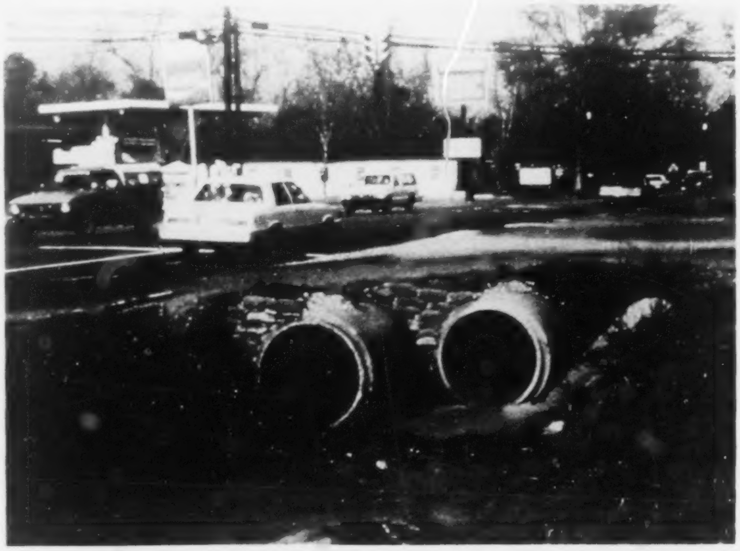
The work zone is an area with high accident potential and resulting lawsuits. A work zone brings changes in the road for the driver, e.g., lane changes, lane drops, obscured pavement markings, slow-moving vehicles, and just plain confusion. The typical motorist can be driving at 55 mph when suddenly faced with an unexpected line-up of vehicles and then — a crash. Work zones conflict with driver expectancy. Therefore, the highway agency must adequately warn the driver.

The *Manual on Uniform Traffic Control Devices* gives guidelines for traffic-control devices in a work zone. The MUTCD is an excellent guide for all signs, signals and markings. Agencies should review it carefully. Most state highway agencies will adopt the MUTCD and/or develop their own document within the MUTCD guidelines. Essentially, the highway agency must have a document that explains traffic-control devices in the work zone.

General guidelines include the color and size of warning signs. Warning signs should be orange with black letters. Orange is used universally across the country to signify a work zone.

Agencies should place warning signs well ahead of the work zone. This is to give the motorist enough distance to slow or stop the vehicle effectively. A vehicle traveling at 50 mph goes 180 feet during driver-reaction time. It takes about 315 feet to stop a vehicle.

Another work-zone concern is the proper use of flag persons. They should position themselves properly so that they can control traffic, ob-



This busy intersection has an inadequate culvert-end treatment and an edge-drop-off problem.

The above scene shows a good example of a clear-zone concept.

The guardrail in this clear zone is substandard and improperly maintained.

serve the construction activity and, most important, be seen by motorists. Flag persons should use the stop and slow paddle to control traffic rather than use a flag or wave a hand.

The Edge Drops

Consider this scenario: The right wheels of a vehicle drop off the edge of the pavement. The driver steers hard to the left, attempting to re-enter the lane. As the front tire climbs the edge of the pavement, the vehicle suddenly shoots across the lane directly into the path of an oncoming vehicle. Both drivers die as a result of the head-on collision. The state is then sued for damages due to the edge drop-off.

This type of accident is very common. Most motorists don't know how to re-enter the roadway safely after they drive off the edge. They should reduce speed until able to reenter the roadway without difficulty. Instead, most motorists jerk the wheel to the left. This oversteers the vehicle into the opposing lane.

Shoulder deterioration and settlement cause edge drop-offs. A driver can usually handle a difference of 3 inches or less in pavement/shoulder elevation. A difference greater than 3 inches presents a problem for safe re-entry to the lane.

Highway agencies should inspect pavements for edge drop-offs and other defects on a regular basis. They should correct low shoulders as quickly as possible. Sometimes the drop-off is severe and cannot be repaired promptly. In this case, it's advisable to put up a barrier until permanent repairs can be made.

Warn the Motorist

Perhaps the area in which most government agencies find themselves in trouble is their response to complaints about signs and markings. Signs, signals and markings regulate, control and warn drivers about highway operations. The MUTCD gives guidelines for the proper use, location and installation of signs.

Warning signs (or the lack of them) are the most commonly stated cause of an accident. Remember, the government agency has a duty to warn a driver of a hazard or other unusual situation. Many lawsuits argue that the highway department did not warn of the "curve in the road," the "slippery pavement," or the "hidden intersection," i.e., the lack of warning caused the accident.

A government agency responsible for highways should understand the MUTCD. The agency must ensure that all signs, signals and markings meet requirements.

In many lawsuits, it comes down to a technicality of whether a sign was in place or not. Often the cause of the accident had nothing to do with the sign. Though the plaintiff can argue that warning did not exist. The lack of a $50 sign can result in a $500,000 settlement. Agencies should maintain a sign inventory, replace signs at regular intervals, and constantly evaluate the need for signs and markings. Accidents will lessen, and liability will decline.

Clear the Way

Fixed objects near the highway present a hazard for a vehicle that runs off the roadway. The majority of these vehicles will recover within 30 feet of the roadway edge. Consequently, a "clear zone" concept has been advocated for several years. The idea is to remove fixed objects from the clear zone. If the agency can't do this, the situation warrants breakaway posts and/or guide rails for fixed objects.

It is very difficult to defend a case in which an agency knew that several vehicles hit a utility pole on the outside of a curve, but the agency didn't move the pole. Again, the maintenance of a clear zone will reduce serious accidents and, in turn, lower the risk of lawsuits.

Stay Out of Court

The loss of sovereign immunity has put highway agencies on notice that they will pay dearly if they don't follow proper procedures. The increase in lawsuits should concern government agencies. But this concern should be an incentive to make highway systems safe.

Accidents may always occur. However, highway departments have an obligation to strive continually for safer roads. Good design, maintenance and operation practices will reduce accidents. A decrease in the number and seriousness of accidents is the best risk-management program an agency can implement.

Walter P. Kilareski is director of the Pavement Infrastructure Management Program, Pennsylvania Transportation Institute, Pennsylvania State University, University Park, Pa.

After the Game Is Over, It's No Ball

Is excessive drinking a problem at local sports events?

An article in this issue talks about alcohol abuse in baseball parks and football stadiums. Problems range from fights among the fans during the game to drunken crashes on the way home.

The article also details how major-league-sports officials have launched programs to reduce excess drinking. They are also increasing the public's awareness of the dangers of drunk driving.

As traffic-safety professionals, our readers know what's happening at the local level across the country. You can help us round out the picture.

After answering the questions, you can tear out this page and send it in. Or if you share your copy of *Traffic Safety* with others, you may want to photocopy the page. Then, if you need more space for your comments, you can continue on the back.

The results will be published in a future issue. Mail your responses to:

Traffic Safety Survey
National Safety Council
444 N. Michigan Ave.
Chicago, IL 60611

	Yes	No	Undecided
1. Do sports events in your area cause drunken driving problems of which you are personally aware?			
2. Are your local sports officials trying to do anything about it?			
3. Do you think their efforts are achieving results?			
4. Overall, would you say that the problem of drinking at sports events, then driving home, is decreasing?			

Comments:

Fuel-Tank Safety Bursts with Activity

Companies have discovered how to tame the tiger in the tank.

By Mark Shuman

No resident of Carrollton, Ky. will ever forget the horror that took place on a spring night three years ago. Sixty-five members of a Carrollton church were returning home in a school bus after a trip to an amusement park.

Suddenly, from the darkness of Interstate 71, a red pick-up truck appeared. The truck was traveling on the wrong side of the road.

An instant after impact, the gas in the bus's fuel tank ignited. The blinding fire that ensued contributed to 26 of the accident's 27 deaths, a doctor's report says.

In the days that followed, witnesses recounted ghastly stories. The victims, they said, crowded to the back of the bus, vainly attempting to escape the smoke and flames. School buses generally get high safety marks for their low ratio of accidents to miles traveled. But the Carrollton tragedy caused many to wonder about finding ways to build safer fuel tanks.

The Technology Is Here

Ned B. Einstein, President for TAM, USA, a Van Nuys, Calif. company, is not wondering. "The technology is here," he says.

His company, whose home office is in Yugoslavia, sells vehicles, including school buses and components. But there is something notable about a new 40-foot bus the company is introducing to North America this year. Its fuel tanks simply will not explode.

Baffle the Flames

The fuel tanks are made with an aluminum alloy that includes traces of copper and manganese. The inserts in the fuel tank diminish the risk of explosion and uncontrolled fire.

A TAM video shows a man with a punctured fuel tank, purposely lighted. But the flame flickers harmlessly, like a candle. The flame extinguishes with the palm of a hand.

The technology is currently used for school buses only. But Einstein says that one day the tanks may also be available to other consumers.

The anti-explosive tanks work with the chemist's principle that if heat cannot transfer among volatile molecules, ignition cannot result. To prevent the heat transfer, TAM inserts baffles into the bus fuel tanks. Baffles channel the fuel through a maze of compartments. And they regulate the flow of the gas.

In retro-fitted tanks, walnut-sized balls made of the alloy fit into a fuel tank. To do this, they weld a tank open and then re-seal it. The cost of a retro-fitting amounts to several hundred dollars, depending upon the size of the fuel tank, Einstein says.

For now, automaking powers in Detroit are not likely to seize a procedure in that price range. But fuel-tank safety is a concern of the Big Three automakers. And it has been since Ford Motor Company's recall of about 1.5 million 1971 to 1976 Pintos to make the sub-compact's gas tanks safer. (The company faced millions of dollars in lawsuits.)

Ideas Catch Fire

One cause for concern came in the 1970s when studies by the Arlington, Va.-based Insurance Institute For Highway Safety uncovered dangerous fuel-tank designs. According to IIHS's Stephen Oesch, a series of six tests "demonstrated that fuel-tank design deficiencies allowed ruptures and gasoline leakage in every single case."

Oesch further notes that a sizable portion of all fire-department costs related to motor-vehicle fires or fuel spillage from crashes.

Government officials, spurred by public outcry, took note. After U.S. senators viewed a film of crash tests, the legislators called hearings. And the federal Department of Transportation mandated design changes for the 1977 automobile models.

Since that year, the DOT requires that fuel tanks be located away from the vulnerable perimeters of vehicles.

A spokesman for the National Highway Traffic Safety Administration also says that since the mid '70s, fuel tanks on new vehicles must pass a strict series of safety tests. Collectively, these tests are the federal "fuel system integrity standard." The standard requires that new vehicles pass crash tests from various angles. This is with both moving and stationary barriers.

For example, in one type of barrier-crash test, vehicles with their fuel tanks 95 percent full must also survive a 30 mph crash. This is with no more than 1 ounce of fuel lost during impact or 5 ounces lost in the following 5 minutes. Similar fuel-loss requirements apply to vehicles that roll over after having undergone the crash test.

Walnut-size balls known as baffles fit into a retrofitted fuel tank. Baffles prevent the gas from igniting.

The federal standards apply to most accident situations and vehicle types, says the NHTSA spokesman. His office is unable to determine how many fuel-system fires cause highway deaths. However, it is clear that if money were no object, fuel fires would all but disappear.

Greg Wrzesinski is shop manager for the Illinois-based automobile imports that recently sent Michael Andretti to the Indianapolis 500. Wrzesinski says the cost of a racing-quality fuel cell runs in the thousands of dollars.

Fuel-cell technology in Indy cars pioneered during the Vietnam War. This technology uses a high-impact vulcanized rubber and Kevlar material, Wrzesinski says. "Racing fuel cells have a need to be strong: They fit snugly into a race car just behind the driver.

> *If money were no object, fuel fires would all but disappear.*

"They're a very deformable puncture-resistant bladder," Wrzesinski adds. Automobile giants are understandably short of the cash that professional racers are willing to spend on a per-vehicle basis.

Automakers are nevertheless looking to improve the safety of fuel tanks. Chevrolet has fitted new model Caprices, Corvettes, Corsicas, Berettas and Lumina APBs with a highly-touted polyethylene plastic fuel tank. The tank is light as well as crash-resistant.

Ford Motor Company is experimenting with a flexible bladder that can fit inside a fuel tank, according to one source.

And Mercedes-Benz spokesman A.B. Shuman says that his company equips all cars except station wagons with fuel tanks mounted above the rear axle. The tanks usually separate from passenger compartments by a steel bulkhead.

They also have subtle features, Shuman says. "The filler necks on some models are designed not to break off. And the fuel-tank openings are located on the side opposite and away from the driver."

Tanks Within Tanks

Like Merc's Shuman, Robert Caniglia is a man who is concerned with fuel-tank safety. His Cleveland, Ohio, business, J.C. Manufacturing Co., has developed a blow-molded and a roto-molded, high-density polyethylene bladder. The bladders can go inside any automobile gasoline tank for about $8 per unit at a high volume.

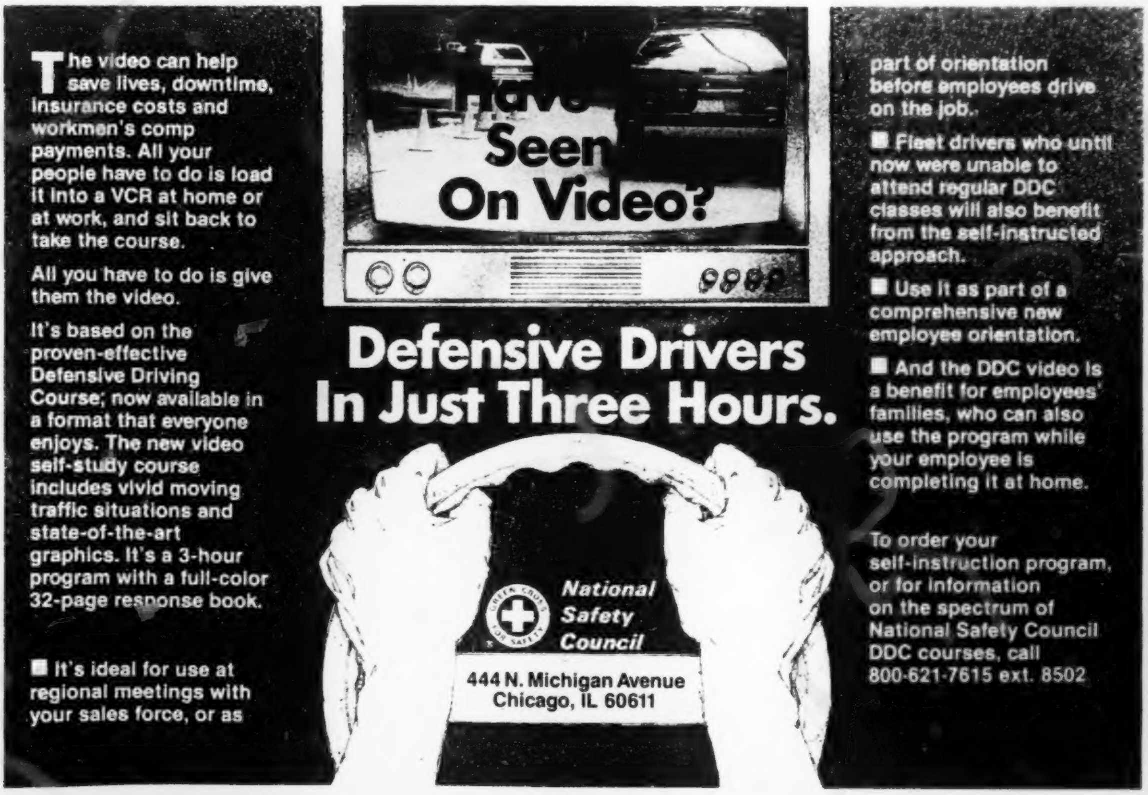
The fuel-tank bladder serves as a protective tank within a tank. But it's also divided into compartments which expand in the event of a collision. If a tank ruptures during impact, the bladder also controls fuel loss. This is because the liquid from a ruptured cell moves to a noncompressed area within the same cell.

Caniglia says his company invented the concept about 12 years ago. The popularity of anti-explosive automobile tanks could soon catch fire, he says.

If widely installed in vehicles, there's no question that designs like Caniglia's and Einstein's would begin saving lives almost immediately.

But one question remains.

How much will manufacturers and consumers spend to tame the deadly tiger in their tanks?



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Diamonds Are a Paver's Friend

CONCRETE PAVER BULLETINS

A new 16-page "Whitetopping" bulletin shows the benefits of concrete overlays for long-term road performance. Graphs, diagrams and detailed how-to tips are easy to read and use. Whitetopping rids the need for frequent resurfacing of asphalt pavements. And Whitetopping controls asphalt rutting. When applied, surfaces require no local restrictions.

An also new bulletin, "Diamond Grinding," tells how to improve ride, skid resistance and traffic-carrying capacity. Its 16 pages are loaded with graphs, diagrams, photos and detail.—**American Concrete Pavement Association**, 3800 N. Wilke Rd., Arlington Heights, IL 60004.

BRIGHT BIKE LIGHTS

Six new quick-release bicycle lights project more focused beams. The lightweight units have high-quality lead-acid batteries. They recharge more than 1,000 times. XEI headlight models range from 4.5 to 10 watts and include a taillight.—Brite Light Cycling Lights, **Specialized Bicycles,** 15130 Concord Circle, Morgan Hill, CA 95037.

PICKS UP CONES

The automated Cone Wheel eliminates the traditional time-consuming and hazardous method of placing and retrieving cones from the roadway. Cone Wheel removes the worker from the dangerous roadway or tailgate position. The Cone Wheel attaches to a truck. So the operator sits safely inside the vehicle bed, securely belted to the swivel seat provided with the unit.

The unit is compact, lightweight and easy to operate. Cone Wheel attaches and detaches in a matter of minutes. It also operates in reverse and on either side of a vehicle. Cone Wheel has universal mounting for stake and flatbed trucks and adapts to a standard pickup truck. An on-board hydraulic lift system allows the Cone Wheel to be stored in the truck bed during transport and then lifted and moved to its operational position when needed.—**ADDCO,** 69 Empire Dr., St. Paul, MN 55103-1856

JOURNEY BACK FROM COMA

This powerful video focuses on two women who were in tragic teenage accidents. The message is drinking and driving is "stupid." *Coma: The Journey Back* shows the recovery of severely brain-injured people. The multi-award-winning video is for junior and senior high, college and adult levels. It is available in 20-minute or 60-minute lengths.—**Varied Directions,** 69 Elm St., Camden, ME 04843.

FLEET SOFTWARE

Fleet Director is an inexpensive computer software program to help manage and reduce costs. It runs on all hard-disk-drive PCs and compatibles, their monitors and printers. Fleet Director helps keep track of vehicles, drivers, maintenance schedules and expenses.

The program features context-sensitive help and easy program navigation via menus. Fleet Director includes a complete user manual in layman's language.—**Oak Tree Systems,** 1104 Ramblewood Way, San Mateo, CA 94403.

NEW EDITION PLANNERS' RESOURCE

Trip Generation, a resource for transportation planners, is completely revised and updated. The fifth edition is based on more than 3,000 trip-generation studies conducted by public agencies, developers and consulting firms.

For each land use, three methods assist the user in determining the average number of trips generated. The first method uses weighted average trip-generation rate. The second method uses a plot of the actual trip ends versus the size of the independent variable for each study. The third method is a regression equation of trip ends related to the size of the independent variable.

This latest reference provides updated information on multiuse projects, pass-by trips and many new land uses.—**Institute of Transportation Engineers,** 525 School St. S.W., Washington, DC 20024-2729.

DATABASE FOR BRIDGES

Database Information for Bridge Systems is a compiled database software package. It permits the input, storage and retrieval of all bridge data stored on the 1990 SI&A sheet. DIBS includes 15 user-defined fields for local information.—**PC-TRANS,** 2011 Learned Hall, Lawrence, KS 66045.

HAZMAT SAFETY DRUM

The Enviropack GENERATION III is an 85-gallon polyethylene overpack drum. A patented safety seal locks the drum's lid with a bolted steel locking ring for safe handling of hazardous materials. Applications for using the GENERATION III are for containment of leaking steel drums of 55 gallons or smaller.

Production capacity is a trailer-truck load each day. The drum has been granted exemption approval by the Department of Transportation for containing hazmat over public-access roads and rails. The drum reduces the risk of exposure to hazardous materials or potential for accidental spills.—**Enviropack Company**, 465 Hamilton Rd., Bossier City, LA 71111.

ACCIDENT FACTS

National
Safety
Council

1991 FINAL CONDENSED EDITION

ISSUED AUGUST 1991

Accidental deaths continued a downward trend in 1990. The death total was 93,500, a decrease of 2 per cent from the revised 1989 total of 95,500.

The population death rate also continued a downward trend. The 1990 death rate per 100,000 population was 37.5, down 3 per cent from the 1989 rate of 38.7. The 1990 rate represents the lowest death rate on record. The death rates for the work and home categories are also the lowest on record.

DISABLING INJURIES numbered 9,000,000, including 340,000 that resulted in some degree of permanent impairment—ranging from partial loss of use of a finger to blindness or complete crippling.

ACCIDENT COSTS amounted to about $173.8 billion. This includes wage loss of $48.2 billion, medical expense of $28.4 billion, administrative and claim settlement costs of insurance, $30.1 billion, property damage in motor-vehicle accidents of $28.2 billion, property loss in fires of about $9.7 billion and certain uninsured costs of work accidents of about $29.2 billion.

Details of deaths, injuries, and costs by class are shown in the box below.

Present indications are that in 1990, as in earlier years, accidents were the fourth leading cause of death, exceeded only by heart disease, cancer, and stroke.

Accidents were the leading cause of death among all persons aged 1 to 37 according to the latest detailed information (1988).

	1990 Deaths	Change from 1989	Deaths per 100,000 Persons	Disabling Injuries[a]	1990 Costs (billion)
ALL CLASSES[b]	93,500	-2%	37.5	9,000,000	$173.8
Motor-vehicle	46,300	-2%	18.6	1,700,000	$89.0
Public nonwork	42,500			1,600,000	
Work	3,600			100,000	
Home	200			([c])	
Work	10,500	-2%	4.2	1,800,000	$63.8
Nonmotor-vehicle	6,900			1,700,000	
Motor-vehicle	3,600			100,000	
Home	21,500	-6%	8.6	3,200,000	$23.5
Nonmotor-vehicle	21,300			3,200,000	
Motor-vehicle	200			([c])	
Public	19,000	+2%	7.6	2,400,000	$13.4

Source: National Safety Council estimates.

[a] Disabling beyond the day of accident. The totals shown are the best estimates for the current year and should not be compared with totals for previous years.

[b] The totals for the four separate classes add to more than the all classes figure due to rounding and because the motor-vehicle totals include some deaths and injuries also included in the work and home totals. This duplication amounted to about 3,800 deaths, 100,000 injuries, and $15.9 billion in costs in 1990.

[c] Less than 10,000.

Accident Facts is published annually in two editions: The Condensed Edition lists a few outstanding facts and is issued twice yearly—in March and August. This Final Condensed Edition gives the revised 1990 estimates. The Complete edition is a 112-page book, published in August, containing charts, tables, and an analysis of the data for all kinds of accidents, including work, motor-vehicle, home, public, and farm. Ordering information is located on the reverse of this page. For inquiries regarding the content of Accident Facts, write to the Statistics Department, National Safety Council, 444 N. Michigan Avenue, Chicago, Illinois 60611, or call 312-527-4800.

ACCIDENT TYPES that were most important in 1990, and changes from 1989, were as follows:

Type	1990	1989	Change
ALL TYPES	93,500	95,500	-2%
Motor-vehicle	46,300	47,100	-2%
Falls	12,400	12,300	+1%
Poison (solid, liquid)	5,700	5,800	-2%
Drowning	5,200	5,000	+4%
Fires, burns	4,300	4,700	-9%
Suffocation—ingestion	3,200	3,700	-14%
Firearms	1,400	1,600	-13%
Poison (gas, vapor)	800	900	-11%

DEATH TOTALS BY AGE GROUP in 1990, and changes from 1989, were as follows:

Age	1990	1989	Change
ALL AGES	93,500	95,500	-2%
0 to 4	3,300	3,700	-11%
5 to 14	3,800	4,100	-7%
15 to 24	16,400	16,600	-1%
25 to 44	27,900	28,700	-3%
45 to 64	15,300	15,600	-2%
65 to 74	8,800	8,800	0%
75 and over	18,000	18,000	0%

MOTOR-VEHICLE ACCIDENTS

The 46,300 deaths from motor-vehicle accidents represents a decrease of 2 per cent from the revised 1989 total of 47,100. This decrease occurred despite increases in the number of miles traveled (+2%), registered vehicles (+1%), and licensed drivers (+1%). The death rate per 100,000,000 vehicle miles was 2.15, a decrease of 4 per cent from the 1989 rate of 2.24, and the lowest rate on record.

Almost two out of three motor-vehicle deaths in 1990 occurred in places classified as rural (less than 5,000 inhabitants). More than one-half (55%) of all deaths occurred at night.

HOME ACCIDENTS

Home accident deaths in 1990 totaled approximately 21,500, down 6 per cent from the 1989 total. Falls remained the leading cause of accidental death in the home, accounting for 30 per cent of deaths, followed by solid and liquid poisonings (22 per cent) and fires (15 per cent).

PUBLIC ACCIDENTS

There were approximately 19,000 deaths in public nonmotor-vehicle accidents during 1990, an increase of 2 per cent from the 1989 total. Falls and drownings were the leading causes of death with 24 per cent and 18 per cent of the total, respectively. Nonmotor-vehicle transport deaths (air, water, railroad, etc.) accounted for 11 per cent of all public deaths.

WORK ACCIDENTS

The 1990 death total for work accidents represents a 2 per cent decrease from 1989, despite a small overall increase in employment of 1 per cent. Vehicle accidents and falls were the leading causes of death, accounting for about 36 per cent and 13 per cent of all work deaths, respectively.

Industry Division	1990 Deaths	1989-90 Change	1990 Rates[a]	1989-90 Change
ALL INDUSTRIES	10,500	-2%	9	0%
Agriculture[b]	1,300	0%	42[c]	+5%
Mining, quarrying[b]	300	0%	43	0%
Construction	2,100	0%	33	+3%
Manufacturing	1,100	0%	6	0%
Transportation and public utilities	1,300	-7%	22	-8%
Trade[b]	1,200	0%	4	0%
Services[b]	1,600	-6%	4	-20%
Government	1,600	0%	9	0%

[a] Deaths per 100,000 workers in each division.

[b] Agriculture includes forestry and fishing. Mining and quarrying includes oil and gas extraction (preliminary MSHA reports indicate 123 deaths in coal, metal and nonmetal mining in 1990). Trade includes wholesale and retail trade. Services includes finance, insurance, and real estate.

[c] Agriculture rate excludes deaths of persons under 14 years of age. Rates for other industry divisions do not require this adjustment. Deaths of persons under 14 are included in the agriculture death total.

Time lost in 1990 due to work deaths and injuries totaled 75 million days. An additional 100 million days will be lost in future years from accidents that occurred in 1990.

In addition to the 10,500 workers killed while at work 36,800 died from off-the-job accidents—a death total of 47,300. Workers injured in both kinds of accidents numbered about 4,600,000.

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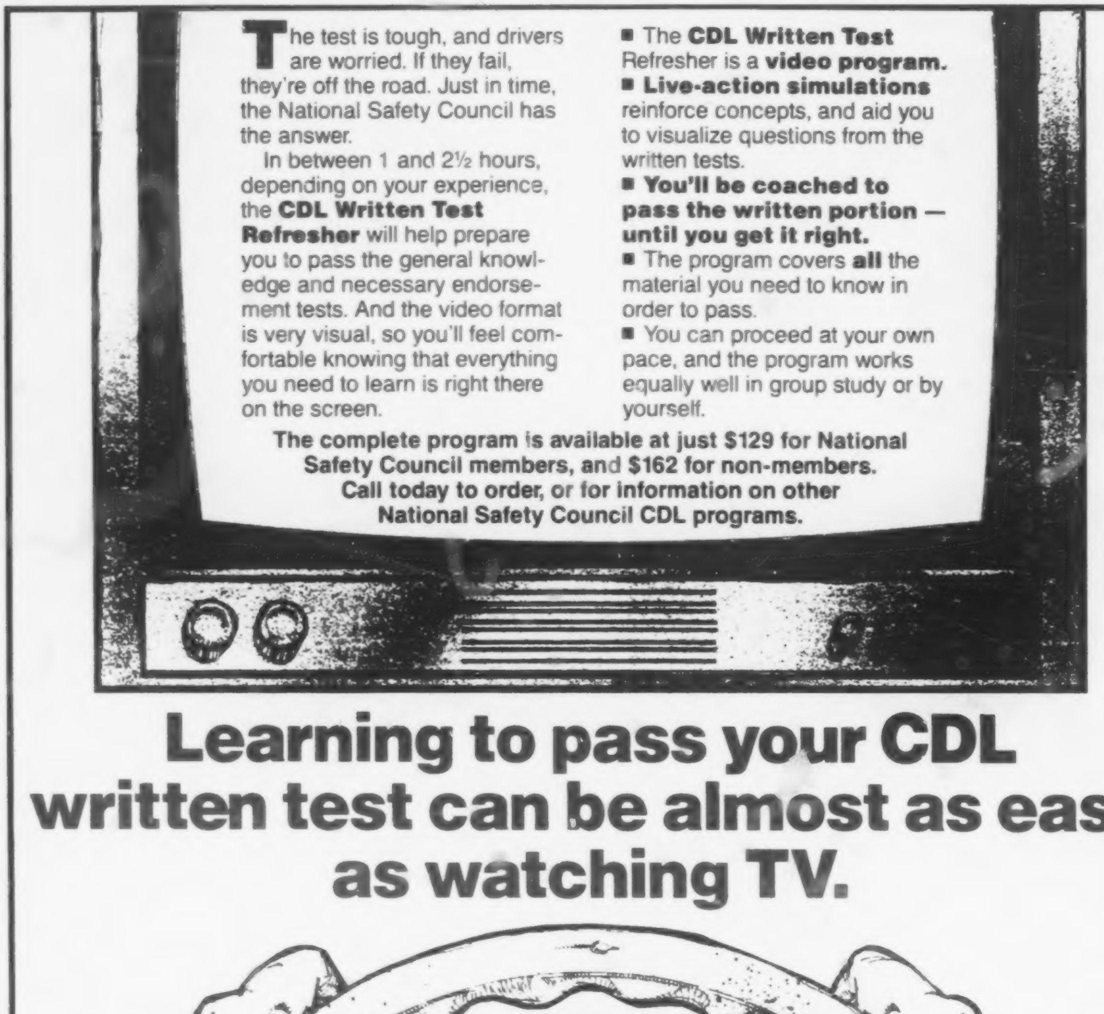

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DANGER: NO-WORK WORK ZONES

Readers protest that signs claim too much and enforcement does too little.

Highway "work zones" where nothing's happening seem to be a big part of the problem of deaths and injuries to highway workers. That's the opinion of a substantial majority of the *Traffic Safety* readers who responded to a survey in the July/August issue.

Eighty-eight percent agree that "motorists would be more likely to slow down if work-zone signs were kept current and indicated the true situation ahead."

Stan Slonski, technical director of the National Association of Fire Equipment Distributors, Chicago, speaks for many with his comment: "Too many 'work zones' are just miles and miles of closed lanes with no work going on. More people might respect lower speed limits in work zones if they weren't so frustrating, and if actual work was going on."

From New Jersey: "Too often, work zones are poorly marked, and the traveling public is inconvenienced while actual work is not ongoing, maybe even postponed. Yet the traffic is bottle-necked."

A southern reader says that work-zone signs in Louisiana stay up when no work is being done. "If you drive the posted speed limit, someone will run over you or try to pass you."

Also Train Workers

A Texas reader observes that "workers, in many cases, are as dangerous as the drivers. Any education program for drivers has to include education for workers to keep them out of the way of the motorist."

There's enough blame to go round for all. "Apathy and complacency on the part of the motoring public, the police and construction workers are the killers in our work zones," says a letter from New York state. "As humans dealing with humans, we will not win, but we must not give up the challenge."

N. L. Allison, a DDC instructor in Houston, pairs better enforcement with "better control of the approaches to construction areas, and not just a few signs saying 'CONSTRUCTION AHEAD.' " He suggests that some traffic lanes could be narrowed instead of closed. And runway mesh could be used instead of constructing new temporary lanes.

An insurance company official writes that "it's always better to eliminate a problem than try to control it."

But not everyone is critical of work-zone management. A North Carolina reader reports living near an area where Interstate 85/40 is being widened from four lanes to eight. "I feel that the state and the construction companies are changing the signage to keep everyone aware of the current conditions of the work zone."

Enforcement Is Needed

Seventy percent of the respondents say yes to "stiffer fines for speed violations in work-zone areas than in other areas of the highway."

Tom Owenby, safety director, APAC-Georgia, Inc., Atlanta, suggests "there should be intense lobbying to convince all states to enact triple speed (penalties) in work-zone areas." He also proposes billboard-size warnings and highly visible police patrols.

Ken Degnan, transportation-safety coordinator, Lifetime Assistance Inc., Rochester, N.Y., writes, "I believe that speed, joined with inattention, tends to be the main culprit in work-zone deaths. . .We might try thinking of what normally slows down a car." That would include speed bumps and "an officer with an obviously pointed radar gun."

A reader who identifies himself as "safety officer for a large highway contractor" points not a radar gun but a finger at public officials. "Most highway and street contracts are let by state or city/town officials who also have control of police action. Yet, once work begins, there is virtually no enforcement. I know of instances when the federal highway inspectors would not permit a contractor to post his own speed-limit signs."

Other comments on this point:

- "Work-zone areas should be operated in the same manner as school zones, with police monitoring during peak traffic times."
- "We must do more to educate the public. They have no idea of the number of deaths and the hazards surrounding the workers."

Off-Duty or Out to Lunch?

Although 79 percent of the respondents favor hiring off-duty police to monitor work-zone traffic speed, those who disagree raise strong objections.

"Why use off-duty officers, when most are in their personal vehicles and could only watch cars speed by without any recourse?" writes an Atlanta reader.

A response from Syracuse, N.Y., voices the fear that "such practice ends up being just an extra means of income for the officer. Such work is boring." The reader proposes rotating on-duty police on work-zone patrol in order to cut down on the boredom and maintain professional standards of enforcement.

The remaining survey question was whether work-zone areas should be designed so that drivers wouldn't have to slow down. Only 37 percent of respondents say yes. Many doubt that this approach is feasible.

EVENTS

SEPTEMBER

National Association of Governor's Highway Safety Representatives Annual Meeting — Sept. 1-5, New Orleans — NAGHSR, 444 N. Capitol St., N.W., Suite 530, Washington, D.C. 20001. (202) 624-5877.

Hazardous Materials/Dangerous Goods Transportation Workshops — Sept. 11-12, Atlanta, Ga. — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611-3991. (312) 547-4800, ext 8407.

DDC-ADD (Defensive Driving Instructor Development - Attitudinal Dynamics of Driving) — Sept. 16-18, Austin, Texas — Patricia Feese, Texas Safety Association, 3834 Spicewood Springs Rd., Austin, TX 78759-8961. (512) 343-6525.

Institute of Transportation Engineers, 61st Annual Meeting — September 22-25. Milwaukee, Wis. — Institute of Transportation Engineers, 525 School St., N.W., Suite 410, Washington, DC 20024-2729. (202) 554-8050.

Hazardous Materials/Dangerous Goods Transportation Workshops — Sept. 25-26, Chicago — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611-3991. (312) 547-4800, ext. 8407.

PTD (Defensive Driving Instructor Development - Professional Truck Driver) — Sept. 26-27, San Francisco — Western Region Office, National Safety Council, 1111 Triton Dr., Ste. 201, Foster City, CA 94404. (800) 848-5588.

International Bridge, Tunnel & Turnpike Association 59th Annual Meeting — Sept. 28-Oct. 2, Dallas, Texas — IBTTA. (202) 659-4620.

OCTOBER

Principles of Fleet Administration Safety — Oct. 1-3, Chicago; Oct. 16-18, San Francisco — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611-3993. (312) 527-4800, ext. 8425. Western Region Office, National Safety Council, 1111 Triton Dr., Ste. 201, Foster City, CA 94404. (800) 848-5588.

12th International Pedestrian Conference — Oct. 2-5, Bethesda, Md., and Boulder, Colo. — Bethesda conference: Ms. Kit Keller, conference coordinator, Pedestrian Federation of America, 1818 R St., N.W., Washington, DC 20009. (202) 332-6986. Boulder conference: Patricia Archibald, conference coordinator, City of Boulder Alternative Transportation Center, P.O. Box 791, Boulder, CO 80306. (303) 441-4260.

National Safety Council Congress '91 — October 6-10, New Orleans — Registration: (312) 527-4800, ext. 8204. Programs: (312) 527-4800 — Driver Improvement, ext. 8502; Highway-Traffic Safety, ext. 8405; Motor Transportation, ext. 8425.

Vehicle Dynamics — Oct. 7-11, Evanston, Ill. — Northwestern University Traffic Institute, 405 Church St., Evanston IL 60208. (708) 491-5476; (800) 323-4011.

AASHTO 77th Annual Meeting — American Association of State Highway and Transportation Officials — October 11-15, Milwaukee, Wis. — Bob Packee or Tom Winkel, (414) 548-5920.

DDC-ADD (Defensive Driving Instructor Development - Attitudinal Dynamics of Driving) — Oct. 15-17, Austin, Tex. — Patricia Feese, Texas Safety Association, 3834 Spicewood Springs Rd., Austin, TX 78759-8961. (512) 343-6525.

VNIS '91 (Vehicle Navigation & Information Systems, International Conference) — Oct. 20-23, Dearborn, Mich. — VNIS papers: Dr. Steven E. Underwood, The University of Michigan, 4110 EECS, Ann Arbor, MI 48109-2122. (313) 764-4333. VNIS '91 Exhibits: Dr. Mark Krage, GM Research Labs, Dept. 18, 30500 Mount Rd., Warren, MI 48090-9057. (313) 986-2976.

ITE 1991 Traffic Engineering Academy — Oct. 21-22, Evanston, Ill. — Thomas Brahms, Northwestern University Traffic Institute, (202) 554-8050.

Hazardous Materials/Dangerous Goods Transportation Workshops — Oct. 23-24, Southfield, Mich. — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611-3991. (312) 547-4800, ext. 8407.

DDC-4 (Defensive Driving Instructor Development - 4) — Oct. 26-27, San Francisco — Western Region Office, National Safety Council, 1111 Triton Dr., Ste. 201, Foster City, CA 94404. (800) 848-5588.

Motor Fleet Accident Investigation — Oct. 28-29, Chicago — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611-3993. (312) 527-4800, ext. 8425.

NOVEMBER

Selective Drug Traffic Law Enforcement— Nov. 4-8, Evanston, Ill. — Northwestern University Traffic Institute, P.O. Box 1409, Evanston, IL 60204. (800) 323-4011.

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If there is something in this issue you want to share with a friend or co-worker—but you don't want to part with your copy—go ahead and give the magazine away. We'll reward your generosity by sending you a free, unthumbed replacement copy by return mail (while quantities last). **To receive your replacement copy, just drop a note to:**

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(Naturally, we'd be happy to hear what it was that you wanted to share.)

Hazardous Materials/Dangerous Goods Transportation Workshops — Nov. 6-7, Monroeville, Pa. — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611-3991. (312) 547-4800, ext. 8407.

Accident Investigation Photography — Nov. 11-15, Evanston, Ill. Northwestern University Traffic Institute, P.O. Box 1409, Evanston, IL 60204. (800) 323-4011.

Hazardous Materials/Dangerous Goods Transportation Workshops — Nov. 13-14, Indianapolis, Ind. — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611-3991. (312) 547-4800, ext. 8407.

DDC-ADD (Defensive Driving Instructor Development - Attitudinal Dynamics of Driving) — Nov. 13-15, Arlington, Tex. — Patricia Feese, Texas Safety Association, 3834 Spicewood Springs Rd., Austin, TX 78759-8961. (512) 343-6525.

DECEMBER

DDC-8 (Defensive Driving Instructor Development - 8) — Dec. 2-4, Chicago — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611-3991. (312) 527-4800, ext. 8527

DDC-4 (Defensive Driving Instructor Development - 4) — Dec 5-6, Chicago — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611-3991. (312) 527-4800, ext. 8527

DDC-ADD (Defensive Driving Instructor Development - Attitudinal Dynamics of Driving) — Dec. 9-11, Chicago — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611-3991. (312) 527-4800, ext. 8527

DDC-CTMD (Defensive Driving Instructor Development — Coaching the Mature Driver) — Dec. 17-18, Chicago — Driver Improvement Programs, National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611-3993. (312) 527-4800, ext. 8527.

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LIBRARY

Accidents

Tignor, S. C., "Highway Safety in the Nineties," *Public Roads*, 400 Seventh St. N.W., Washington, DC 20590. Vol. 54, No. 4, March 1991, pp. 265-270.

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Spence, W. R., *Drinking and Driving: Murder on Our Highways.* nd. Spence Research, Health Edco Division, Waco, TX 76702. 16 pp.

Safer Streets Ahead: A Community Handbook to Prevent Impaired Driving. September 1990. National Highway Traffic Safety Administration, 400 Seventh St. S.W., Washington, DC 20590. 56 pp.

Handicapped

Levine, L., "Disabilities Act Forces Sweeping Transit Changes," *Metro Magazine*, 2500 Artesia Blvd., Redondo Beach, CA 90278. Vol. 87, No. 2, March/April 1991, pp. 30, 32-34.

Please Note: Library is prepared by the National Safety Council Library — Robert Marecek, manager. The National Safety Council Library is unable to supply any of the materials listed here. For your convenience, the names and addresses of the publishers are listed.

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Shepard, F. D., "Improving Work Zone Delineation On Limited Access Highways," *Transportation Research Record*, 2101 Constitution Ave. N.W., Washington, DC 20418. No. 1254, 1990, pp. 36-43.

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Annual Report On Hazardous Materials Transportation, Calendar Year 1989. 1990. Department of Transportation, Research & Special Programs Administration, 400 Seventh St. S.W., Washington, DC 20590.

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Pedestrians

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Safety Research for a Changing Highway Environment. 1990. Transportation Research Board, 2101 Constitution Ave. N.W., Washington, DC 20418. 176 pp.

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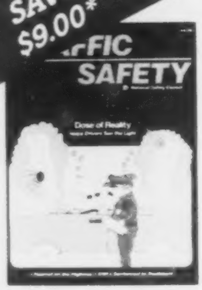

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April Traffic Deaths Down 15%

By Mary E. Johnston and Ursula Zuehlke

Motor-vehicle deaths in April totaled 3,260, a decrease of 15 percent from the April 1990 total of 3,850.

Deaths for the four-month period ending April totaled 12,580, a decrease of 10 percent from the 1990 four-month total of 14,030.

Disabling injuries for 1991 are estimated to be almost 453,000. These are injuries resulting in disability beyond the day of the accident, and do not include minor injuries, which probably totaled as many more.

The cost of motor-vehicle accidents for 1991 is estimated to be more than $18 billion.

Based on preliminary vehicle mileage reports for this year, the estimated annual mileage death rate is 1.9 deaths per 100 million vehicle miles traveled.

Notes to Table

Deaths are reported by state traffic authorities. All figures are preliminary. To ensure proper comparisons, 1989 and 1990 figures cover the same reporting period as those for 1991.

States shown in CAPS had fewer deaths in 1991 than they did in 1990 for the same reporting period.

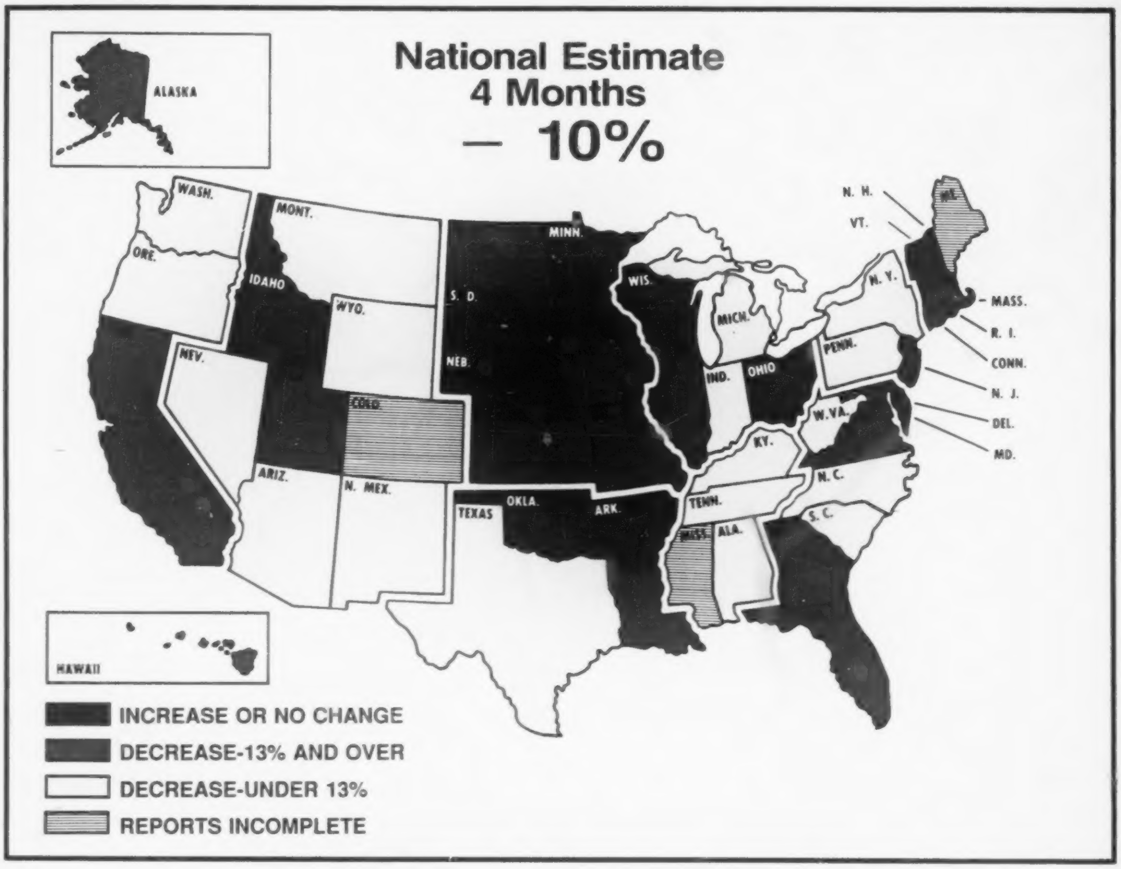
Population Rate: U.S. population rate and state population rates are the estimated annual number of deaths per 100,000 population. U.S. population rate is based on the July 1, 1991, population estimate; state population rates are based on July 1, 1990, population estimates, U.S. Bureau of the Census, Washington, D.C.

Mileage Rate: The number of deaths per 100 million vehicle miles of travel.

State Traffic Deaths

		DEATHS IDENTICAL PERIODS			PERCENT CHANGES			
STATE	NO. OF MOS.	1991	1990	1989	1990 TO 1991	1989 TO 1991	1991 POP. RATE	1991 MILE. RATE
Total U.S.	**4**	**12,580**	**14,030**	**14,050**	**– 10%**	**– 10%**	**16.8**	**1.9**
ALABAMA	4	309	331	297	– 7%	+ 4%	22.9	2.2
ALASKA	4	19	27	17	– 30%	+ 12%	10.4	1.1
ARIZONA	4	217	237	272	– 8%	– 20%	17.8	1.8
Arkansas	4	171	139	168	+ 23%	+ 2%	21.8	2.5
CALIFORNIA	4	1,195	1,389	1,534	– 14%	– 22%	12.0	1.4
Colorado	3	91	90	84	+ 1%	+ 8%	11.0	1.3
CONNECTICUT	4	90	120	115	– 25%	– 22%	8.2	1.1
DELAWARE	4	32	52	35	– 38%	– 9%	14.4	1.5
D. of C.	2	9	7	20	+ 29%	– 55%	8.9	1.6
FLORIDA	4	859	1,018	1,081	– 16%	– 21%	19.9	2.3
GEORGIA	4	419	485	464	– 14%	– 10%	19.4	1.6
HAWAII	4	40	46	46	– 13%	– 13%	10.8	1.6
Idaho	4	60	55	42	+ 9%	+ 43%	17.9	2.1
ILLINOIS	4	365	445	474	– 18%	– 23%	9.6	1.3
INDIANA	4	267	278	263	– 4%	+ 2%	14.4	1.4
IOWA	4	105	129	128	– 19%	– 18%	11.3	1.5
KANSAS	4	112	138	118	– 19%	– 5%	13.6	1.6
KENTUCKY	4	238	268	239	– 11%	– *%	19.4	2.1
LOUISIANA	4	204	248	237	– 18%	– 14%	14.5	1.7
Maine	3	33	34	52	– 3%	– 37%	10.8	1.1
MARYLAND	4	175	217	212	– 19%	– 17%	11.0	1.5
MASSACHUSETTS	4	128	176	212	– 27%	– 40%	6.4	0.9
MICHIGAN	4	378	384	419	– 2%	– 10%	12.2	1.4
Minnesota	4	132	130	126	+ 2%	+ 5%	9.1	1.1
Mississippi	3	172	141	163	+ 22%	+ 6%	26.7	2.9
MISSOURI	4	238	289	272	– 18%	– 13%	14.0	1.5
MONTANA	4	46	52	41	– 12%	+ 12%	17.3	1.6
Nebraska	4	66	55	85	+ 20%	– 22%	12.5	1.4
NEVADA	4	97	100	65	– 3%	+ 49%	24.2	3.0
New Hampshire	4	44	36	55	+ 22%	– 20%	11.9	1.4
NEW JERSEY	4	211	282	289	– 25%	– 27%	8.2	1.0
NEW MEXICO	4	126	128	162	– 2%	– 22%	25.0	2.3
NEW YORK	4	504	567	574	– 11%	– 12%	8.4	1.4
NORTH CAROLINA	4	357	386	424	– 8%	– 16%	16.2	1.7
NORTH DAKOTA	4	18	26	15	– 31%	+ 20%	8.5	0.9
Ohio	4	420	395	443	+ 6%	– 5%	11.3	1.5
Oklahoma	4	204	192	177	+ 6%	+ 15%	19.5	1.8
OREGON	4	145	165	155	– 12%	– 6%	15.3	1.6
PENNSYLVANIA	4	450	507	528	– 11%	– 15%	11.4	1.6
RHODE ISLAND	4	20	32	36	– 38%	– 44%	6.0	0.9
SOUTH CAROLINA	4	278	312	332	– 11%	– 16%	23.9	2.4
South Dakota	4	45	35	38	+ 29%	+ 18%	19.4	2.0
TENNESSEE	4	313	322	326	– 3%	– 4%	19.3	2.1
TEXAS	4	867	956	968	– 9%	– 10%	15.3	1.6
UTAH	4	61	79	57	– 23%	+ 7%	10.6	1.4
Vermont	4	25	25	36	0%	– 31%	13.3	1.3
VIRGINIA	4	246	324	273	– 24%	– 10%	11.9	1.2
WASHINGTON	4	204	227	133	– 10%	+ 53%	12.6	1.4
WEST VIRGINIA	4	105	119	156	– 12%	– 33%	17.6	2.1
Wisconsin	4	197	189	191	+ 4%	+ 3%	12.1	1.4
WYOMING	4	22	23	25	– 4%	– 12%	14.6	1.2
Puerto Rico #	1	45	42	41	+ 7%	+ 10%	16.4	—
Virgin Islands #	4	1	7	4	– 86%	– 75%	2.8	—
		— CANADIAN PROVINCES —						
Alberta	4	102	117	104	– 13%	– 2%	19.3	—
British Columbia	4	131	170	143	– 23%	– 8%	18.6	—

Not included in the Total U.S. death count or rates.
* Less than 0.5%.


National Estimate
4 Months
– 10%
ALASKA
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IDAHO
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S. D.
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OKLA.
TEXAS
ARK.
WIS.
MICH.
IND.
OHIO
KY.
TENN.
MISS.
ALA.
W.VA.
N. C.
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PENN.
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INCREASE OR NO CHANGE
DECREASE-13% AND OVER
DECREASE-UNDER 13%
REPORTS INCOMPLETE

Motor-Vehicle Deaths and Changes Total U.S.

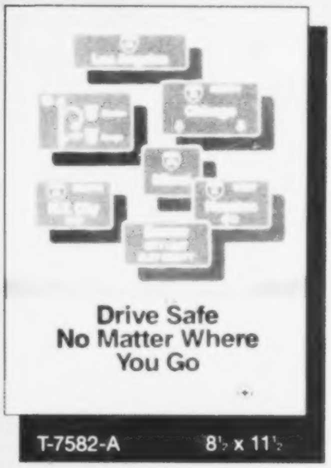
	Deaths				Percentage Changes				
					Corresponding Month			4-Month Moving Average +	
Month	1988	1989	1990	1991	1989-91	1989-90	1990-91	1989-90	1990-91
January	3,382	3,530	3,480	2,950	– 16%		– 15%		– 9%
February	3,129	3,090	3,220	3,030	– 2%		– 6%		– 9%
March	3,595	3,630	3,480	3,340	– 9%		– 4%		– 9%
April	3,808	3,770	3,850	3,260	– 14%		– 15%		– 10%
4 Months	13,914	14,050	14,030	12,580	– 10%		– 10%		
May	4,220	3,910	4,030			+ 3%		+ 1%	
June	4,319	3,980	4,150			+ 4%		+ 1%	
July	4,639	4,390	4,500			+ 3%		+ 3%	
August	4,683	4,370	4,620			+ 6%		+ 4%	
September	4,345	4,170	3,980			– 5%		+ 2%	
October	4,567	4,360	3,980			– 9%		– 1%	
November	4,005	3,800	3,600			– 5%		– 3%	
December	4,386	4,070	3,710			– 9%		– 7%	
TOTAL	49,078	47,100	46,600	45,150[‡]		– 1%			

The 1988 figures come from the National Center for Health Statistics. The 1989, 1990, and 1991 figures are National Safety Council estimates.

+ Four-Month Moving Average is based on changes between the totals for four months. For example, the April figure shows the change between the totals for January 1990 - April 1990 and January 1991 - April 1991. Adding several months together tends to smooth out single-month changes that may be affected by differences in the number of weekends in a month from one year to the next or by other random variations.

[‡] Deaths for the 12-month period ending April 1991.

NEW POSTERS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No Matter Where
You Go

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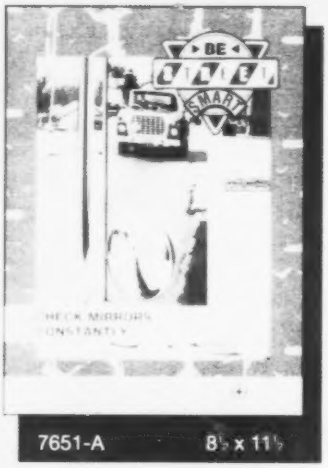
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CHECK MIRRORS
CONSTANTLY

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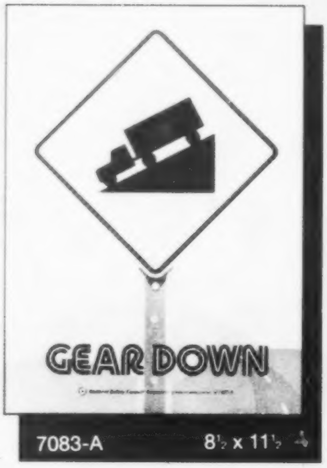
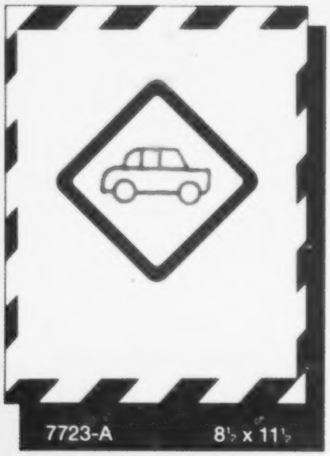
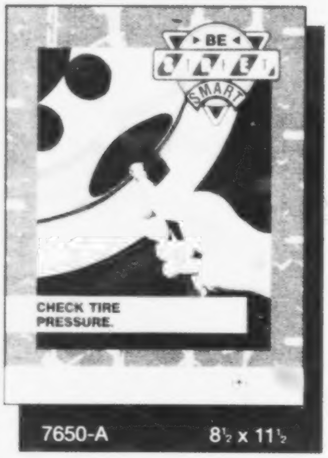


7083-A 8½ x 11½



7723-A 8½ x 11½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